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# THE ERA FORMULARY

For Manufacturers, Druggists, Physicians, Hospitals,  
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## CONTENTS CLASSIFIED UNDER NINE DIVISIONS:

- I. UNOFFICIAL PHARMACEUTICAL PREPARATIONS.
    - II. TOILET PREPARATIONS, TOOTH POWDERS, PERFUMERY.
    - III. VETERINARY REMEDIES.
    - IV. FAMILY MEDICINES.
    - V. HOUSEHOLD FORMULAS, DOMESTIC RECEIPTS.
    - VI. TECHNICAL FORMULAS, INDUSTRIAL PROCESSES.
    - VII. PAINTS, VARNISHES, FLOOR STAINS.
    - VIII. BEVERAGES AND FOOD PRODUCTS.
    - IX. MISCELLANEOUS FORMULAS, PROCESSES, ETC.
- 

NEW AND GREATLY ENLARGED EDITION.

WITH COMPLETE AND COMPREHENSIVE INDEX.

---

By WILLIAM C. ALPERS, SC. D.

Dean and Professor of Pharmacy, Cleveland School of Pharmacy (Western Reserve  
University); Member of the Committee of Revision of the U.S. Pharmacopoeia, etc.

AND

EZRA J. KENNEDY, PH. C.

Editor of THE PHARMACEUTICAL ERA.

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# PREFACE

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**I**N RECENT years such marvelous advances have been made in scientific fields, especially in applied technology, that a new edition of this Formulary which should embody the accumulated results of experience and represent the most approved modern practice along a great variety of lines became a necessity. To fill this need has been the aim of those entrusted with the preparation of this volume, and in the performance of their labors they have based their work on a most careful study of the needs of the manufacturer, pharmacist, physician, agriculturist, horticulturist, stock-raiser, veterinarian; in short, on the requirements of most of the industrial arts and handicrafts and utilitarian necessities of man.

This edition is essentially in its entirety a new book. Of the nearly 8000 formulas presented, more than 5000 did not appear in the previous edition, while those which were retained have been recast and better adapted for the purpose designed. Pains have also been taken to make the nomenclature employed in all the formulas uniform and definite, and to supplement wherever necessary each of the formulas and processes presented with instructions for their manipulation, thereby eliminating guesswork on the part of the inexperienced operator. The whole available range of technical literature has been scanned to get the best and most recent information for this work, and the formulas submitted represent several years of compilation. Many of these formulas are original contributions to *The Pharmaceutical Era*, others have never before been published, but all have been selected with the distinct purpose of making available information not usually obtainable, thus giving the user of the book a wider range of operation in the manufacturing field, and thereby suggesting means which if intelligently developed would make possible increased financial returns.

As in the first edition, all formulas contained in the United States Pharmacopoeia and the National Formulary have been omitted from this book on the ground that a duplication of such official formulas was unnecessary for the pharmaceutical users of this volume, for at best these formulas, if printed at all, could only appear in abbreviated form as approved by the Committees of Revision of the official standards. The wisdom of this omission is further accentuated by the fact that many of the States have laws on the statute books which require all pharmacists to be supplied with these publications, and for this reason no attempt has been made to load the book with formulas which the pharmacist already has, a plan that has been too frequently followed by compilers of most of the formularies extant. In this respect the *Era Formulary* differs from other works of its class, and in this omission we believe that druggists and workers along other lines will be better served by the extension of the scope of the book that has been made in the direction of general and technical manufacturing.

The nine prime divisions logically separate the contents of the book into those departments of professional, industrial, and household economics which contribute to the utilitarian necessities of modern life. In the division devoted to unofficial pharmaceutical preparations, or general pharmaceutical preparations, for which working processes are not given in the Pharmacopoeia or National Formulary, so far as possible the formulas have been brought under the special headings of elixirs, syrups, liniments, ointments, etc., together with a more or less close alphabetical arrangement so far as is rendered possible by the nature of the formulas or the class. Included in this division are many formulas which are strictly original, never having been in print, and, as a rule,

## PREFACE

the formulas have received the sanction of pharmacists, and with care in the choice of material and manipulation, it is believed success will attend their preparation.

In the division devoted to toilet preparations, the number and classes of formulas have been greatly extended in response to frequent requests for this kind of information. The large number of specialties on the market belonging to this class of manufacturing may be taken as incontestible evidence of the demand of the public for such articles, as well as the profitable returns that are to be derived from their fabrication. A reference to the pages of the book devoted to this division will convince anyone of the great number and variety of formulas offered for these specialties.

The collection of veterinary formulas has also been extended and should prove of service to both the trained veterinarian and the farmer or stock-raiser, remedies being given for the diseases of all animals domesticated or in the service of man. In the departments of family medicines and household recipes the formulas, prescriptions and receipts have been carefully and conscientiously selected from the best possible sources, and we believe they will answer most of the requirements demanded in the home, the kitchen and laundry, or for general household purposes.

The sections devoted to technical formulas, industrial processes, paints, varnishes, etc., beverages and food products, and the heterogeneous collection called "miscellaneous formulas" likewise reflect the diversity of requirements of the industrial arts and handicrafts. From the old-fashioned glue to the cement for the modern cinematograph film; from whitewash to liquid veneer; from flavoring extracts to bouillon cubes; and from manufacturing ink in its simplest form to the intelligent use of disinfectants and insecticides as employed in modern times, there is represented a great industrial advancement, a progress which in its many ramifications has contributed greatly to the wants of all classes of mankind. In this respect these departments of the book will commend themselves to the artisan in whatever handicraft, the manufacturer of foods, the soda-fountain operator, the photographer, the printer, the horticulturist, the sanitary engineer and the hospital interne or nurse.

In this edition the department formerly devoted to the supposed formulas for proprietary preparations and trade-marked specialties has been omitted. The reason for this must be obvious. From the very nature of these preparations their composition is more or less of a secret, and any published formulas of them can be only approximations of their real constitution. At best, this information is unsatisfactory, and even were the real composition of such remedies or specialties known, the use of their respective proprietary or trade-marked names for commercial exploitation would be prohibited.

Great pains have been taken to provide a thoroughly comprehensive index and one which should facilitate reference and the easy finding of formulas in any line. In consulting this index one should look for the specific name of the preparation or article desired, and also under the generic or class heading, as it is frequently impossible to accurately index certain preparations under but one head or cite a reference that embodies but a single, specific idea.

In submitting this volume we hope that it may contribute to the benefit and consequent advancement of those into whose hands it may fall. If they shall profit by any of the suggestions or by the information herein contained we shall feel compensated. We also hope that it may prove of even more value than the first edition, whose well-earned reputation has so long commended it to workers in many lines.

W. C. ALPERS,  
E. J. KENNEDY.



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# PART ONE.

## Unofficial Pharmaceutical Preparations.

### ELIXIRS.

#### Elixir Simple.

Oil of bitter orange.....	30 minims
Alcohol .....	4 fl. ounces
Syrup .....	6 fl. ounces
Water .....	6 fl. ounces

Dissolve the oil in the alcohol, add the syrup in small portions, shaking after every addition; add the water, shake well, and let stand 24 hours. Filter through talcum powder.

#### Elixir Simple.

The following formula is very simple and palatable, is quickly made, and can be used with iron salts:

Syrup .....	4 ounces
Alcohol .....	4 ounces
Cinnamon water .....	7 ounces
Vanilla extract .....	1 ounce

Mix, and filter if necessary.

#### Elixir Simple.

Oil of sweet orange.....	15 drops
Oil of Ceylon cinnamon...	3 drops
Oil of anise .....	1 drop
Oil of coriander .....	1 drop
Oil of bitter almonds ...	1 drop
Alcohol .....	4 ounces
Simple syrup .....	4 ounces
Water .....	8 ounces

Dissolve the oils in the alcohol. Mix together the water and simple syrup. Add gradually to the solution of oils, shaking after each addition. Paper pulp or talcum powder may be used to facilitate clear filtration.

#### Elixir Simple, Red.

Oil of orange peel .....	½ dram
Oil of caraway .....	1 drop
Oil of cassia .....	1 drop
Tincture of cardamom co..	1 ounce
Alcohol .....	3½ fl. ounces
Syrup .....	4 fl. ounces
Orange-flower water .....	1 fl. ounce
Water .....	6½ fl. ounces

Mix the oils and alcohol, add the tincture, then the syrup in small portions, shaking after each addition, and lastly the orange-flower water and water. Filter through paper pulp or talcum powder. If a deeper color is required, add tincture of cudbear to suit.

#### Elixir Simple.

Spirit of orange.....	½ fl. ounce
Alcohol .....	4 fl. ounces
Cinnamon water .....	5½ fl. ounces
Syrup .....	6 fl. ounces

Mix and filter through paper pulp or talcum powder.

#### Elixir Simple (Without Sugar).

Oil of orange.....	½ fl. dram
Alcohol .....	4 fl. ounces
Glycerin .....	8 fl. ounces
Water .....	4 fl. ounces

Mix and filter through paper pulp or powdered talcum.

#### Elixir Simple (Without Sugar).

Oil of orange .....	½ fl. dram
Oil of cassia .....	1 drop
Oil of bitter almonds ....	1 drop
Oil of anise .....	2 drops
Saccharin .....	3 grains
Alcohol .....	4 ounces
Water .....	12 ounces

Dissolve the oil in the alcohol, and the saccharin in the water, mix slowly. Filter through paper pulp or powdered talcum.

#### Elixir Acetanilide (or Antifebrin).

Acetanilide (or antifebrin)	640 grains
Alcohol .....	4 fl. ounces
Glycerin .....	6 fl. ounces
Water .....	6 fl. ounces
Oil of orange .....	15 drops
Oil of anise .....	2 drops
Oil of cassia .....	1 drop

Dissolve the acetanilide in the alcohol with the aid of a gentle heat, add the oils, add the glycerin gradually, shaking after each addition, add the water. Shake and filter through powdered talcum. Each teaspoonful contains 5 grains of acetanilide (or antifebrin).

#### Elixir Acetanilide and Caffeine.

Elixir of acetanilide.....	16 ounces
Caffeine citrate .....	128 grains

Dissolve and filter if necessary.

This is a valuable elixir for headache, neuralgia, nervous irritability, etc.

#### Elixir Adjuvans.

Many elixirs with various flavors are known by this name. The best is the one official in the U.S.P., made by mixing 1 part of fluid-extract of licorice with 7 parts of simple elixir. If a different flavor is desired, any of the simple elixirs described above may be used.

#### Elixirs Aletris (Aletris Cordial).

Fluidextract aletris .....	3 fl. ounces
Alcohol .....	3 fl. ounces
Water .....	3 fl. ounces
Sherry wine .....	7 fl. ounces

Mix and filter.

#### Elixir Aletris Compound.

Fluidextract of aletris.....	1 fl. ounce
Fluidextract of caulophyl- lum .....	1 fl. ounce
Fluidextract of viburnum opulus .....	1 fl. ounce
Fluidextract of helonias...	1 fl. ounce
Syrup .....	2 ounces
Alcohol .....	2 ounces
Sherry wine .....	2 ounces

Mix and filter.

#### Elixir Alkaline (Elixir Rhubarb Comp.)

Fluidextract of rhubarb...	½ fl. ounce
Tincture of cardamom com- pound .....	2 fl. ounces
Spirit of peppermint.....	¼ fl. ounce
Potassium bicarbonate ...	½ fl. ounce
Elixir simple, enough to make .....	16 ounces

Dissolve the salt in the elixir, add the other ingredients, shake, let stand for 24 hours, and filter through powdered talcum.

**Elixir Amarum (Bitter Elixir).**

Fluidextract of wormwood. 3 fl. ounces  
 Spirit of peppermint..... ¼ fl. ounce  
 Elixir simple, enough to  
 make ..... 16 fl. ounces

Mix and filter.

**Elixir Ammonium Bromide.**

Ammonium bromide ..... 640 grains  
 Elixir simple ..... 1 pint

Dissolve the salt in the elixir and filter if necessary.

**Elixir Ammonium Chloride (Elixir Ammonium Muriate).**

Ammonium chloride..... 640 grains  
 Elixir ..... 1 pint

Dissolve the salt in the elixir and filter. Each teaspoonful contains 5 grains of ammonium chloride.

**Elixir Ammonium Valerate (Elixir of Valerianate of Ammonium).**

Ammonium valerate..... 128 grains  
 Ammonia water U. S. P. 45 minims  
 Syrup ..... 2 ounces  
 Elixir simple..... 14 ounces

Dissolve the ammonium valerate in the elixir, add the ammonia water and syrup, and mix.

If a red elixir is required, two ounces of tincture of cardamom may be substituted for 2 ounces of simple elixir.

If the dose of ammonium valerate is increased to 2 grains to the teaspoonful, viz. to 256 grains, the ammonia water must also be doubled.

**Elixir Analgesic.**

Acetanilide or (antipyrine) 256 grains  
 Sodium bromide..... 256 grains  
 Caffeine citrate..... 64 grains  
 Camphor monobromated... 32 grains  
 Sodium bicarbonate..... 256 grains

Elixir, enough to make 1 pint. Dissolve the solid ingredients in the elixir and filter.

**Elixir Anise (Anise Seed Cordial)**

Oil of anise ..... 25 drops  
 Oil of fennel ..... 5 drops  
 Oil of bitter almond..... 2 drops  
 Alcohol ..... 4 ounces  
 Syrup ..... 6 ounces  
 Water ..... 6 ounces

Dissolve the oils in the alcohol, add the syrup gradually, shaking after each addition, add the water, shake and filter with powdered talcum.

**Elixir Antipyrine.**

Antipyrine ..... 640 grains  
 Alcohol ..... 1 fl. ounce  
 Syrup of raspberries..... 6 fl. ounces  
 Distilled water,  
 sufficient for ..... 16 fl. ounces

Dissolve the antipyrine in 6 ounces of water, add the alcohol and syrup and enough water to make 16 fluid ounces.

**Elixir Anti-Asthmatic.**

Sodium bromide..... 256 grains  
 Sodium iodide..... 256 grains  
 Fluidextract of euphorbia.. 1 fl. dram  
 Spirit of nitroglycerin.... 1 fl. dram  
 Tincture of lobelia..... 1 fl. dram

Elixir, enough to make 1 pint. Dissolve the salts in 12 fl. ounces elixir, add the other ingredients and enough elixir to make one pint. Mix and filter.

**Elixir Antiscorbutic.**

Antipyrine ..... 640 grains  
 Cinchona ..... 1½ ounces  
 Guaiacum ..... 2½ ounces  
 Pellitory ..... 1½ ounces  
 Orange peel..... 1 dram  
 Cloves ..... 2½ drams  
 Saffron ..... ½ dram  
 Benzoin ..... 1 dram  
 Dilute alcohol or brandy 16 ounces

Digest and filter, adding enough of the liquid used through the filter, to make one pint.

**Elixir Aromatic.**

Aromatic elixirs are the same as "simple elixirs," and any of the latter may be used in their stead.

**Elixir Bismuth.**

Bismuth and ammonia  
 citrate ..... 256 grains  
 Elixir, enough to make... 1 pint

Dissolve the salt in the elixir. If the solution should be turbid, add ammonia water, drop by drop, stirring the mixture well, until clear.

**Elixir Bismuth Comp.**

Compound elixirs of bismuth are made by dissolving the required article (iron and ammonium citrate, or strychnine sulphate, etc.) in the plain elixir of bismuth.

**Elixir Blackberry.**

Fluidextract of blackberry  
 root ..... 2 ounces  
 Elixir ..... 14 ounces

Mix and filter.

**Elixir Brom-Acetan-Caffeine.**

Potassium bromide..... 640 grains  
 Acetanilide ..... 256 grains  
 Caffeine ..... 128 grains  
 Elixir ..... 16 fl. ounces

Dissolve the solid ingredients in the elixir with the aid of a gentle heat, and filter if necessary.

**Elixir Bromide.**

Bromide elixirs are made by dissolving various bromides in plain elixir, so that a teaspoonful contains 15 grains. According to the number of bromides used, they are called, elixir of one, two, three, four or five bromides.

**Elixir of Potassium Bromide.**

Potassium bromide..... 1920 grains  
 Elixir, enough to make... 1 pint  
 Dissolve the salt in the elixir.

**Elixir of Five Bromides.**

Potassium bromide..... 384 grains  
 Sodium bromide..... 384 grains  
 Calcium bromide..... 384 grains  
 Strontium bromide..... 384 grains  
 Ammonium bromide..... 384 grains  
 Elixir enough to make... 1 pint

**Elixir Bromo-Caffeine.**

Potassium bromide..... 640 grains  
 Caffeine ..... 128 grains  
 Elixir, enough to make... 1 pint

Dissolve the caffeine and salt in the elixir and filter. This elixir is sometimes colored. Caramel may be used for a brown. Tincture of cudbear for a red color.

**Elixir Buchu.**

Fluidextract of buchu ..... 4 fl. ounces  
 Elixir simple..... 12 fl. ounces  
 Mix and filter with powdered talcum.



**Elixir Buchu.**

Fluidextract of buchu ..... 4 fl. ounces  
 Fluidextract of taraxacum  
 comp. .... 12 fl. ounces  
 Mix and filter with powdered talcum.

**Elixir Buchu Compound.**

Fluidextract of buchu..... 2 fl. ounces  
 Fluidextract of pareira  
 brava ..... 1 fl. ounce  
 Fluidextract of uva ursi... 1 fl. ounce  
 Talcum ..... ½ ounce  
 Elixir taraxacum com-  
 pound, to make..... 1 pint

Triturate the fluidextracts with the talcum, add 12 ounces of elixir, mixing thoroughly, filter and add enough elixir to measure 1 pint. Each fluid dram represents 7½ grains buchu and 3¼ grains each of pareira and uva ursi.

**Elixir Buchu and Potassium Acetate.**

Potassium acetate.....640 grains  
 Elixir of buchu..... 1 pint  
 Dissolve the salt in the elixir and filter.

**Elixir Buchu, Juniper, Uva Ursi and Potassium Acetate (Diuretic Elixir).**

Fluidextract of buchu ..... 2 fl. ounces  
 Fluidextract of uva ursi...1½ fl. ounces  
 Fluidextract of juniper  
 berries ..... 1 fl. ounce  
 Potassium acetate.....640 grains  
 Elixir, enough to make.... 1 pint

Dissolve the salt in 10 fluid ounces of elixir, add the fluidextracts and enough elixir to make 1 pint. Filter through talcum.

**Elixir Caffeine.**

Caffeine citrate.....128 grains  
 Elixir ..... 1 pint  
 Dissolve the citrate in the elixir.

**Elixir Caffeine.**

Caffeine citrate.....128 grains  
 Elixir of taraxacum comp. 1 pint  
 Dissolve the citrate in the elixir.

**Elixir Calisaya (or Cinchona).**

Cinchona bark.....1½ ounces  
 Fresh orange peel..... 1 ounce  
 Cinnamon ..... ¼ ounce  
 Clover ..... 10 grains  
 Cardamom ..... 10 grains  
 Elixir, enough to make.... 1 pint

Reduce the drugs to a fine powder, macerate with the elixir for 8 days, filter and add enough elixir through the filter to make 1 pint.

**Elixir Calisaya, or Cinchona (made from alkaloids).**

Quinine sulphate..... 8 grains  
 Cinchonidine sulphate.... 10 grains  
 Elixir ..... 1 pint

Dissolve the salts in the elixir. This elixir is generally colored red with tincture of cudbear, 1 ounce to the pint.

**Elixir Calisaya.**

Tincture of cinchona comp. 1 fl. ounce  
 Tincture of cardamom  
 comp. .... 1 fl. ounce  
 Tincture of gentian comp. ½ fl. ounce  
 Elixir, enough to make.... 16 fl. ounces

Mix and filter through talcum. This is a good elixir for the soda fountain.

The preceding three elixirs of calisaya or cinchona answer all ordinary purposes. If the elixir is to be mixed with iron salts, only the second one, made from alkaloids, is available, owing to its freedom from tannic acid. Sometimes, it is desired to make an elixir

from the bark, miscible with iron salts, and a few formulas for a detannated elixir from the bark are therefore added.

**Elixir Calisaya Bark, Detannated.**

Calisaya bark..... 5 troy ounces  
 Curacao orange peel..... 3 troy ounces  
 Coriander ..... 1 troy ounce  
 Cardamom ..... ½ troy ounce  
 Ceylon cinnamon..... ½ troy ounce  
 Anise ..... ¼ troy ounce  
 Sugar ..... 3 pounds

Alcohol,  
 Water, of each, a sufficient  
 quantity.

Reduce to a moderately fine powder; displace with a mixture consisting of one part, by measure, of alcohol, and three parts of water, until half a gallon of percolate is obtained.

Meanwhile, prepare hydrated sesquioxide of iron, from one pint of solution of tersulphate of iron, measure it, and add to every four measures one measure of alcohol; then add of this sufficient to the percolate obtained as above to deprive it of cincho-tannic acid. The absence of the latter is readily ascertained by the addition of a drop of tincture of chloride of iron to a filtered portion of the liquid in operation, which should not be colored by such addition. Should coloring result, the intensity or faintness will serve as a guide to the further quantity of hydrated sesquioxide of iron necessary to completely detannate the preparation. As soon as this result is obtained, strain the mixture upon a muslin strainer, and when the liquid ceases to pass, wash the residue upon the strainer, with sufficient of a mixture of 1 measure of alcohol to 3 of water, to make the strained liquid measure one gallon, in which dissolve 3 pounds of sugar. If necessary, filter, but simple straining will usually answer.

**Elixir Calisaya Detannated.**

Take the best quality of calisaya bark, in fine powder, 12 ounces avoirdupois, well-burned quick lime, ½ pound. Slack the lime in least quantity of water, and mix intimately with the powdered bark, moisten the mixture with strong alcohol, and pack in a glass percolator. Pour on alcohol and percolate, returning the first portions of the menstruum to the percolator until it comes through colorless, or until it does not darken on addition of solution ferric chloride, showing the absence of tannin. Then proceed with the percolation, using strong alcohol, until 2 pints of the detannated tincture are obtained.

Make 2½ pints of syrup, using 2 pounds of sugar to 1 pint of water.

Prepare as follows:

Oil of sweet orange..... ¼ ounce  
 Oil of caraway seed..... ¼ ounce  
 Oil of cassia ..... ¼ ounce  
 Oil of anise ..... ¼ dram  
 Alcohol ..... 2 ounces

Dissolve the oils in the alcohol.

Take this mixture and rub well in a mortar with magnesium carbonate and ½ pint of 25 per cent. alcohol, and filter. Add 10 grains of citric acid to the syrup to prevent precipitation of the alkaloids, and mix with the detannated tincture, adding 3 pints of water. After thoroughly agitating add the portion of the flavoring mixture previously made soluble. Filter the whole. If not clear and bright, thoroughly shake a portion with paper pulp and refilter.

This formula in quantities given, makes 1 gallon of the finished product, each fluid dram representing 5 grains of the bark, and about 25 per cent. alcohol, miscible with any of the iron preparations.

**Elixir Calisaya, Detannated.**

Fluidextract of calisaya... ½ ounce  
 Elixir, enough to make... 16 ounces  
 Mix and add the white of one egg. Shake well. Let stand 24 hours, heat to 190° and when cool, filter.

**Elixir Calisaya and Iron.**

Iron and ammonium citrate... 128 grains  
 Elixir calisaya from alkaloids, or detannated... 1 pint  
 Dissolve the salt in the elixir; color as desired.

**Elixir Calisaya, Iron and Strychnine.**

Strychnine sulphate... 1¼ grains  
 Elixir of calisaya and iron 1 pint  
 Dissolve the strychnine in the elixir. Each teaspoonful of this elixir contains 1/100 grain of strychnine and 1 grain of iron salt. The dose of strychnine and iron may, of course, be increased or decreased, as desired.

**Elixir Calisaya Compound.**

Many other ingredients besides iron and strychnine are sometimes added to elixir of calisaya, as bismuth, lactopeptine, hypophosphites, etc. These elixirs are all made in the same way, by dissolving the solids in the elixir and filtering, taking care to use the detannated or alkaloidal elixir for iron solutions.

**Elixir Calisaya with Phosphates.**

Concentrated solution of phosphates ..... 1 fl. ounce  
 Red cherry juice..... 2 ounces  
 Elixir of calisaya, enough to make..... 1 pint  
 Mix.

**Elixir Camphor Monobromated.**

Monobromated camphor... 128 grains  
 Alcohol ..... 1 ounce  
 Elixir, enough to make... 1 pint  
 Dissolve the camphor in the alcohol with the aid of a gentle heat, and add the elixir slowly. Color as desired.

**Elixir Camphor Monobromated Compound.**

Camphor monobromated.... 128 grains  
 Chloral hydrate..... 1 ounce  
 Tincture of gelsemium... ½ ounce  
 Alcohol ..... 1 ounce  
 Elixir, enough to make... 1 pint  
 Dissolve the camphor in the alcohol with the aid of a gentle heat, and the chloral in the elixir; mix and add the tincture. Shake, and color if desired.

**Elixir Cascara Sagrada.**

Fluidextract cascara sagrada, bitterless..... 2 ounces  
 Simple elixir..... 14 ounces  
 Potassium carbonate..... 1 dram  
 Mix and filter.

**Elixir Cascara Sagrada, Aromatic.**

Fluidextract of cascara... 4 fl. ounces  
 Syrup of wild cherry..... 2 fl. ounces  
 Syrup ..... 6 fl. ounces  
 Oil of cloves and cassia, each ..... 6 minims  
 Oil of lemon and orange each, ..... 20 minims  
 Oil of nutmeg ..... 4 minims  
 Oil of fennel ..... 12 minims  
 Alcohol ..... 2½ fl. ounces  
 Fuller's earth ..... ½ ounce  
 Water ..... 2 fl. ounces  
 Mix and filter, pouring water through the filter to make 1 pint.

**Elixir Cascara Sagrada (tasteless) (Cascara Cordial).**

Cascara sagrada bark.... 8 ounces  
 Licorice root..... 3 ounces  
 Calamus root..... 1 ounce  
 Cardamom seed..... ½ ounce  
 Angelica root..... ½ ounce  
 Coriander ..... ¼ ounce  
 Sodium bicarbonate..... ½ ounce  
 Elixir, enough to make... 4 pints  
 Reduce the drugs to a coarse powder, moisten with 1 pint elixir, in which the sodium bicarbonate has been dissolved. Macerate for 24 hours, transfer to a percolator, covering with elixir, set in a warm place for 24 hours, and percolate with elixir until 4 pints are obtained.

**Elixir Cathartic or Laxative.**

Fluidextract of rhubarb .. ½ fl. ounce  
 Fluidextract of senna ..... ½ fl. ounce  
 Fluidextract of taraxacum ½ fl. ounce  
 Fluidextract of buckthorn bark ..... ¼ fl. ounce  
 Fluidextract of ginger ..... ¼ fl. ounce  
 Rochelle salt..... 1 troy ounce  
 Simple elixir..... 14 fl. ounces  
 Carbonate of magnesium, a sufficient quantity.

Triturate the fluidextracts (having previously mixed them together) in a capacious mortar, with carbonate of magnesium sufficient to form a creamy mixture; then gradually add the simple elixir, stirring well and filter. Lastly dissolve in the filtrate the Rochelle salt.

**Elixir Cathartic or Laxative.**

Powdered Peruvian bark.. ½ ounce  
 Butternut (the inner bark of the root, dried and bruised) ..... ½ ounce  
 Senna ..... ½ ounce  
 Dried peppermint..... ¼ ounce  
 Fennel seed (bruised)... ¼ ounce  
 Wild cherry bark, powdered ..... ¼ ounce  
 Poplar bark, powdered... ¼ ounce  
 Digest for 14 days and strain, adding enough elixir to make one pint.

**Elixir Cathartic Compound.**

Resin of podophyllum .... 8 grains  
 Resin of leptandra ..... 16 grains  
 Alcohol ..... ½ ounce  
 Fluidextract of senna..... 2 ounces  
 Tartrate potassium and sodium ..... 2 av. ounces  
 Bicarbonate sodium..... 120 grains  
 Syrup ..... 2 ounces  
 Compound elixir taraxacum ..... 4 ounces  
 Elixir of glycyrrhiza to make ..... 16 ounces  
 Dissolve the resins in the alcohol and add the solution to the other liquids previously mixed and in which the salts have been dissolved. The product should not be filtered but should be shaken up before any portion of it is used.

**Elixir Cathartic Compound.**

Fluidextract of senna ..... 2 ounces  
 Fluidextract of licorice ... 1 ounce  
 Epsom salt..... 2 ounces  
 Fluidextract of ginger ..... 48 ounces  
 Fluidextract of coriander . 80 minims  
 Fluidextract of jalap ..... 160 minims  
 Scammony in fine powder ..... 160 grains  
 Elixir, enough to make... 1 pint  
 Dissolve the epsom salt and scammony in 8 ounces of elixir, add the fluidextracts and enough elixir to make one pint. Filter.



**Elixir Celery Compound.**

Fluidextract of celery ..... 1 fl. ounce  
 Fluidextract of coca ..... 1 fl. ounce  
 Fluidextract of kola ..... 1 fl. ounce  
 Fluidextract of viburnum  
 prunifolium ..... 2 fl. ounces  
 Elixir, enough to make... 16 ounces  
 Mix, allow to stand 24 hours, filter.

**Elixir Celery and Guarana.**

Potassium bromide.....384 grains  
 Fluidextract of celery ..... 2 fl. ounces  
 Fluidextract of guarana .. 2 fl. ounces  
 Elixir, enough to make... 1 pint  
 Mix, allow to stand 24 hours, and filter.

**Elixir Chloral.**

Chloral hydrate.....640 grains  
 Elixir (white or red)..... 1 pint  
 Dissolve the chloral in the elixir.

**Elixir Chlorides.**

A number of elixirs have been introduced containing from one to six different chlorides, of which the following are the most common ones. The list might be extended, if desired.

**Elixir of One Chloride.**

Mercury bichloride (corrosive sublimate)..... 16 grains  
 Elixir ..... 1 pint  
 Dissolve the chloride in the elixir.

**Elixir of Two Chlorides.**

Tincture citro-chloride of iron ..... 1½ ounces  
 Arsenic chloride..... 2 grains  
 Elixir, enough to make... 1 pint  
 Dissolve the arsenic in the tincture and mix with the elixir.  
 Whenever these preparations contain iron, the detannated or alkaloidal elixirs should be used.

**Elixir of Three Chlorides.**

Tincture of citro-chloride of iron.....1½ ounces  
 Arsenic chloride..... 2 grains  
 Mercury bichloride..... 16 grains  
 Hydrochloric acid, diluted, a sufficient quantity.  
 Elixir, enough to make... 1 pint  
 Dissolve the chlorides in the tincture, adding a few drops of diluted hydrochloric acid if necessary. Mix with the elixir.

**Elixir of Four Chlorides.**

Tincture of citro-chloride of iron.....1½ ounces  
 Arsenic chloride..... 2 grains  
 Mercury bichloride..... 16 grains  
 Ammonium chloride.....640 grains  
 Diluted hydrochloric acid, a sufficient quantity.  
 Elixir, enough to make... 1 pint  
 Dissolve the arsenic and mercury salts in the tincture with the aid of a few drops of diluted hydrochloric acid; dissolve the ammonium chloride in the elixir. Mix the two solutions.

**Elixir of Five Chlorides.**

Strychnine ..... 2 grains  
 Dilute hydrochloric acid, a sufficient quantity.  
 Elixir of four chlorides.... 1 pint  
 Rub the strychnine with a little of the elixir in a mortar, adding a few drops of diluted hydrochloric acid, if necessary. Then add the elixir.

**Elixir of Six Chlorides.**

Gold and sodium chloride., 8 grains  
 Elixir of five chlorides.... 1 pint  
 Dissolve the salt in the elixir.

**Elixir Chloroform.**

Chloroform .....128 minims  
 Alcohol ..... 1 ounce  
 Elixir, enough to make... 1 pint  
 Dissolve the chloroform in the alcohol and add the elixir.

**Elixir of Chloroform Compound.**

This name is sometimes used for certain articles, called "Chlorodyne."

**Elixir Cinchona.**

See Elixir Calisaya.

**Elixir Coca, Elixir Erythroxylin.**

Fluidextract of coca..... 2 fl. ounces  
 Elixir ..... 14 fl. ounces  
 Mix, let stand 24 hours, and filter through talcum.

**Elixir Coca and Calisaya.**

Elixir of coca..... 8 ounces  
 Elixir of calisaya ..... 8 ounces  
 Mix.

**Elixir Coca and Guarana.**

Fluidextract of coca ..... 2 fl. ounces  
 Fluidextract of guarana .. 2 fl. ounces  
 Elixir ..... 12 fl. ounces  
 Mix, let stand 24 hours, and filter through talcum.

**Elixir Cocaine.**

Cocaine hydrochloride.... 32 grains  
 Elixir ..... 1 pint  
 Dissolve the cocaine in the elixir.

**Elixir Curacao.**

Bitter orange peel..... 1 ounce  
 Cloves ..... 10 grains  
 Canella ..... 10 grains  
 Elixir, enough to make... 1 pint  
 Grind the drugs to a fine powder, macerate for 8 days in the elixir, shaking often, then filter and add enough elixir through the filter to obtain one pint.

**Elixir Damiana.**

Fluidextract of damiana... 2 fl. ounces  
 Elixir ..... 14 fl. ounces  
 Mix, and filter with talcum.

**Elixir Damiana Compound.**

Fluidextract of damiana .. 2 fl. ounces  
 Fluidextract of buchu .... 1 fl. ounce  
 Fluidextract of nux vomica 2 fl. drams  
 Elixir, enough to make... 1 pint  
 Mix and filter with talcum.

**Elixir Damiana, Phosphorus and Nux Vomica.**

Fluidextract of nux vomica 2 fl. drams  
 Fluidextract of damiana .. 2 fl. ounces  
 Spirit of phosphorus..... 1 fl. ounce  
 Elixir, enough to make... 1 pint  
 Mix the fluidextracts with 12 ounces of elixir, filter through talcum, add the spirit of phosphorus and enough elixir to make 1 pint.

**Elixir Dandelion (Elixir Taraxacum).**

Fluidextract of dandelion.. 2 fl. ounces  
 Simple elixir.....14 fl. ounces  
 Magnesium carbonate, a sufficient quantity.  
 Triturate the fluidextract of dandelion with carbonate of magnesium sufficient to form a creamy mixture, then gradually add the simple elixir, stir well, and filter. Each fluid

dram of the finished elixir represents seven and a half minims of fluidextract of dandelion.

#### **Elixir Dandelion Compound (Elixir Taraxacum Compound).**

Fluidextract of taraxacum . . . 1 fl. ounce  
Fluidextract of wild cherry . . . 2 fl. drams  
Fluidextract of licorice . . . 1 fl. ounce  
Tincture of sweet orange . . . 1 fl. ounce  
Comp. tincture of cardamom  $\frac{1}{2}$  fl. ounce  
Elixir, enough to make . . . 1 pint

Mix the fluidextracts and tincture with 10 ounces of elixir, let stand 8 days, shaking often, filter through talcum and add enough elixir to make one pint.

#### **Elixir Eucalyptus.**

Fluidextract of eucalyptus . . . 2 fl. ounces  
Elixir . . . . . 14 fl. ounces

Mix and filter through talcum.

#### **Elixir Gentian.**

Fluidextract of gentian . . . 1 fl. ounce  
Elixir . . . . . 15 fl. ounces

Mix and filter.

#### **Elixir Gentian and Iron.**

Tincture citro-chloride of iron . . . . . 1 fl. ounce  
Elixir of gentian . . . . . 15 fl. ounces  
Mix.

Many other combinations of gentian and iron are ordered, as the chloride, phosphate, and pyrophosphate, etc. In all these cases the iron salt is best dissolved in a small quantity of water and then added to the elixir of gentian. It is advisable to detannate the elixir of gentian, which can be done in the same way as described with elixir calisaya.

#### **Elixir Glycerophosphates.**

Many elixirs have been introduced under this name containing from two to six glycerophosphates. They are all made by dissolving the salts in the elixir with the aid of a little glycerophosphoric acid. The addition of glycerin in place of some of the elixir greatly improves the preparation. Below is given a formula with six glycerophosphates, which can be modified by omitting one, two or more of them:

#### **Elixir Glycerophosphates Compound.**

Calcium glycerophosphate . . . 128 grains  
Sodium glycerophosphate . . . 256 grains  
Iron glycerophosphate . . . . 64 grains  
Manganese glycerophosphate . . . 64 grains  
Quinine glycerophosphate . . . 32 grains  
Strychnine glycerophosphate . . . 2 grains  
Glycerophosphoric acid . . . . 2 fl. drams  
Glycerin . . . . . 4 fl. ounces  
Elixir, enough to make . . . 16 fl. ounces

Dissolve the salts in 10 fluid ounces of elixir to which the acid has been added, add the glycerin and enough elixir to make one pint; mix well.

#### **Elixir Glycerophosphates (without sugar).**

It is often required to prepare this elixir without sugar. In that case the sugarless elixirs (elixir simple without sugar) should be used in the preceding formula.

#### **Elixir Grindelia Robusta.**

Fluidextract of grindelia . . .  $2\frac{1}{2}$  fl. ounces  
Elixir . . . . .  $13\frac{1}{2}$  fl. ounces  
Mix and filter through talcum.

#### **Elixir Grindelia, Aromatic.**

Fluidextract of grindelia . . . 2 fl. ounces  
Tincture of asarum canadensis . . . . .  $\frac{1}{2}$  fl. ounce  
Alcohol . . . . . 2 fl. ounces  
Oil of cloves . . . . . 6 drops  
Oil of anise . . . . . 4 drops  
Oil of coriander . . . . . 3 drops  
Elixir, enough to make . . . 1 pint

Dissolve the oils in the alcohol, add the fluidextract, tincture, and 10 ounces of elixir. Shake well and let stand 24 hours. Then filter through talcum and pass enough elixir through the filter to obtain 1 pint.

#### **Elixir Guarana.**

Fluidextract of guarana . . . 2 fl. ounces  
Elixir . . . . . 14 fl. ounces  
Mix and filter.

#### **Elixir Guarana and Celery.**

Fluidextract of guarana . . . 2 fl. ounces  
Fluidextract of celery . . . . 2 fl. ounces  
Elixir . . . . . 12 fl. ounces  
Mix and filter.

#### **Elixir Headache.**

See Elixir of Acetanilide and Caffeine and Elixir Brom-Acetan-Caffeine.

#### **Elixir Helonias.**

Fluidextract of helonias . . . 2 fl. ounces  
Elixir . . . . . 14 fl. ounces  
Mix and filter through talcum.

#### **Elixir Helonias Compound.**

Fluidextract of helonias . . . 2 fl. ounces  
Fluidextract of caulophyllum . . . . . 1 fl. ounce  
Fluidextract of viburnum opulus . . . . . 1 fl. ounce  
Elixir . . . . . 12 fl. ounces  
Mix and filter through talcum.

#### **Elixir Heroin.**

Heroin hydrochloride . . . . 5 grains  
Elixir . . . . . 1 pint  
Dissolve the heroin in the elixir.

#### **Elixir Heroin and Terpin Hydrate.**

Heroin hydrochloride . . . . 5 grains  
Terpin hydrate . . . . . 128 grains  
Alcohol . . . . . 1 fl. ounce  
Elixir, enough to make . . . 1 pint  
Dissolve the terpin hydrate in the alcohol and the heroin in one ounce of elixir. Mix and add enough elixir to make 1 pint. Filter if necessary.

#### **Elixir Hops.**

Fluidextract of hops . . . . . 2 fl. ounces  
Tincture of sweet orange . . . 1 fl. ounce  
Elixir . . . . . 13 fl. ounces  
Mix, let stand 24 hours, and filter through talcum.

#### **Elixir Iodides.**

Various elixirs under this name, containing from one to five iodides, or more, have been introduced. The following are two examples, after which others can be made:

#### **Elixir Potassium Iodide.**

Potassium iodide . . . . . 640 grains  
Elixir, enough to make . . . 1 pint  
Dissolve the iodide in the elixir.

#### **Elixir Five Iodides.**

Potassium iodide . . . . . 360 grains  
Ammonium iodide . . . . . 360 grains  
Sodium iodide . . . . . 360 grains  
Mercury iodide (red) . . . . 32 grains  
Arsenic iodide . . . . . 3 grains  
Elixir, enough to make . . . 1 pint  
Dissolve the iodides in the elixir.



**Elixir Ipecac and Opium (Dover's Elixir).**

Opium, powdered.....128 grains  
 Ipecac, powdered.....128 grains  
 Elixir ..... 1 pint

Macerate the opium and ipecac in the elixir for a week, shaking often, and filter.

**Elixir Ipecac and Opium (Dover's Elixir)..**

Tincture of opium.....2¼ fl. ounces  
 Fluidextract of ipecac.....¼ fl. ounce  
 Elixir ..... 13 fl. ounces

Mix, let stand 24 hours, and filter. A teaspoonful of this and the preceding elixir is equal to 10 grains of Dover's powder.

**Elixir of Iron.**

There is a great number of iron elixirs on record. Nearly all of them are made by simply dissolving the required quantity of iron salts in plain elixir, selecting those that are free from tannic acid. The best known one is the Elixir of Iron, Quinine and Strychnine, formulas of which can be found in the U. S. Pharmacopoeia and the National Formulary.

**Elixir Kola.**

Fluidextract of kola..... 2 fl. ounces  
 Elixir ..... 14 fl. ounces  
 Mix and filter.

**Elixir Kola Compound.**

Fluidextract of kola .....1½ fl. ounces  
 Fluidextract of coca .....1½ fl. ounces  
 Elixir ..... 13 fl. ounces  
 Mix and filter.

**Elixir Lactated Pepsin.**

Lactated pepsin.....640 grains  
 Elixir ..... 1 pint  
 Mix, let stand for 24 hours, filter. This elixir may be colored by adding  
 Tincture of cudbear..... ½ ounce

**Elixir Lactated Pepsin Compound.**

There are many kinds of this elixir, made by adding a soluble salt to Elixir Lactated Pepsin, as bismuth and ammonium citrate, iron and ammonium citrate, quinine bisulphate, strychnine sulphate, etc. Elixir of gentian or calisaya may also be mixed with it.

**Elixir Laxative.**

A number of formulas are given under Elixir Cathartic.

**Elixir Licorice.**

Fluidextract of licorice.... 2 fl. ounces  
 Elixir ..... 14 fl. ounces  
 Mix and filter.

**Elixir Licorice Aromatic.**

Fluidextract of licorice .. 2 fl. ounces  
 Fluidextract of sweet orange ..... ½ fl. ounce  
 Fluidextract of coriander ¼ fl. ounce  
 Fluidextract of angelica seed ..... ¼ fl. ounce  
 Fluidextract of cinnamon . ¼ fl. ounce  
 Fluidextract of cloves ... ¼ fl. ounce  
 Simple elixir..... 13 fl. ounces  
 Alcohol ..... ½ fl. ounce  
 Carbonate of magnesium, a sufficient quantity.

Triturate the fluidextracts with carbonate of magnesium sufficient to form a creamy mixture; then gradually add the simple elixir, stirring well, and filter.

Each fluid dram of the finished elixir represents 7½ minims of fluidextract of licorice, together with aromatics.

**Elixir Licorice Aromatized.**

Fluidextract of licorice  
 root ..... 2 fl. ounces  
 Oil of nutmeg ..... 2 minims  
 Oil of anise ..... 5 minims  
 Oil of coriander ..... 6 minims  
 Oil of fennel ..... 4 minims  
 Deodorized alcohol ..... 4 fl. ounces  
 Distilled water..... 5 fl. ounces  
 Carbonate magnesia.....120 grains  
 Syrup, simple..... 5 fl. ounces

Dissolve the oils in the alcohol, mix in a mortar intimately with the magnesia, add gradually the fluidextract, syrup and water, mix well and filter, adding enough water through the filter to obtain 1 pint.

**Elixir of Life.**

Cinnamon ..... 1 ounce  
 Calamus ..... ¼ ounce  
 Angelica root..... ½ ounce  
 Saffron, Spanish..... ½ ounce  
 Glycerin ..... 4 fl. ounces  
 Elixir, enough to make... 1 pint

Reduce the drugs to a coarse powder and macerate in a mixture of four ounces of glycerin and 12 ounces of elixir for eight days, shaking often. Filter to obtain 1 pint.

**Elixir of Life, Bitter.**

Tincture of aloes..... ½ fl. ounce  
 Elixir of Life.....15½ fl. ounces  
 Mix.

**Elixir Morphine.**

Morphine sulphate..... 16 grains  
 Elixir ..... 1 pint  
 Dissolve the morphine in the elixir.

**Elixir Nux Vomica.**

Tincture of nux vomica.....640 minims  
 Diluted sulphuric acid... 2 fl. drams  
 Elixir, enough to make... 1 pint  
 Mix.

**Elixir Opium.**

Opium, in powder.....128 grains  
 Elixir ..... 1 pint  
 Macerate the opium in the elixir for eight days, and filter.

**Elixir Opium.**

Tincture of opium.....2¾ fl. ounces  
 Elixir .....13¼ fl. ounces  
 Mix.

**Elixir Pancreatin.**

Pancreatin ..... 1 ounce  
 Glycerin ..... 4 fl. ounces  
 Elixir ..... 12 fl. ounces  
 Macerate the pancreatin in the glycerin and elixir for 24 hours, and filter.

**Elixir Paraldehyde.**

Paraldehyde .....640 minims  
 Alcohol ..... 2 fl. ounces  
 Elixir, enough to make... 1 pint  
 Mix the paraldehyde and the alcohol, add gradually the elixir, stirring continually, until one pint is obtained.

**Elixir Pepsin.**

Pepsin, scales.....128 grains  
 Hydrochloric acid, dilute.1½ fl. drams  
 Glycerin ..... 2 fl. ounces  
 Elixir, enough to make... 1 pint  
 Rub the pepsin in a mortar with one ounce of elixir, add the acid and let stand for 6 hours. Then add the glycerin and enough elixir to make one pint. Filter, if necessary.

**Elixir Pepsin and Pancreatin.**

Elixir of pepsin ..... 8 fl. ounces  
 Elixir of pancreatin..... 8 fl. ounces  
 Mix.

**Elixir Pepsin and Bismuth.**

Bismuth and ammonium  
citrate .....128 grains  
Elixir of pepsin..... 1 pint

Dissolve the bismuth salt in the elixir. If the solution should be cloudy, add carefully, drop by drop, water of ammonia. If a red elixir is desired, color with tincture of cudbear.

**Elixir Pepsin, Bismuth and Iron.**

Iron and ammonium cit-  
rate .....128 grains  
Elixir of bismuth (without  
cudbear) ..... 1 pint

Dissolve the iron in the elixir.

**Elixir Pepsin, Bismuth, Iron and Strychnine.**

Strychnine sulphate..... 2 grains  
Elixir pepsin, bismuth  
and iron..... 1 pint

Dissolve the strychnine in the elixir.

**Elixir Pepsin and Lactic Acid.**

Pepsin, scales.....128 grains  
Lactic acid..... 64 minims  
Glycerin ..... 2 fl. ounces  
Water ..... 2 fl. ounces  
Elixir ..... 12 fl. ounces

Rub the pepsin intimately with the water, add the lactic acid, and let stand for 6 hours. Then add the glycerin and elixir, mix intimately and filter. Tincture of cudbear,  $\frac{1}{2}$  ounce, may be added before filtering, if a red elixir is required.

**Elixir Pepsin Compound.**

A great many compound pepsin elixirs may be made by dissolving the required substances in plain elixir of pepsin, or by adding pepsin to other elixirs, using a little diluted hydrochloric acid to dissolve the pepsin.

**Elixir Phosphorus.**

Spirit of phosphorus..... $3\frac{1}{2}$  fl. ounces  
Glycerin ..... 4 fl. ounces  
Elixir, enough to make... 1 pint  
Mix.

**Elixir Phosphorus and Nux Vomica.**

Tincture of nux vomica.....384 minims  
Elixir of phosphorus,  
enough to make..... 1 pint  
Mix.

**Elixir Phosphorus, Iron, Quinine and Strychnine.**

Elixir of phosphorus ..... 8 fl. ounces  
Elixir of iron, quinine and  
strychnine ..... 8 fl. ounces  
Mix.

**Elixir Pink Root Compound (Anthelmintic Elixir).**

Fluidextract of pink root.. 2 fl. ounces  
Fluidextract of senna ..... 1 fl. ounce  
Elixir ..... 13 fl. ounces  
Mix, let stand 24 hours, and filter.

**Elixir Potassium Bromide and Chloral Hydrate (Elixir Bromide-Chloral).**

Potassium bromide.....640 grains  
Chloral hydrate..... 1 ounce  
Elixir, enough to make... 1 pint  
Dissolve the bromide and chloral in the elixir.

**Elixir of Quinine.**

Quinine bisulphate.....128 grains  
Elixir ..... 1 pint  
Dissolve the quinine in the elixir.

**Elixir Potassium Bromide Compound (Sedative Elixir).**

Potassium bromide.....640 grains  
Morphine sulphate..... 8 grains  
Ammonium valerate.....256 grains  
Ammonia water..... $1\frac{1}{2}$  fl. drams  
Elixir, enough to make... 1 pint

Dissolve the salts in the elixir, add the ammonia water, color, if desired, with carmine solution, and filter.

**Elixir Quebracho.**

Fluidextract of quebracho 1 fl. ounce  
Magnesium carbonate.... 2 drams  
Mix thoroughly, then add:  
Tincture of vanilla.....120 minims  
Aromatic elixir, enough to  
make ..... 1 pint  
Filter.

**Elixir for Quinine (Quinelixir).**

Fluidextract of yerba  
santa ..... 1 fl. ounce  
Elixir of taraxacum comp. 4 fl. ounces  
Elixir ..... 11 fl. ounces  
Mix, let stand 24 hours, and filter.

**Elixir Rhubarb.**

Fluidextract of rhubarb... 2 fl. ounces  
Simple elixir..... 14 fl. ounces  
Magnesium carbonate, a  
sufficient

quantity.  
Triturate the fluidextract in a capacious mortar with sufficient magnesium carbonate to form a creamy mixture; then gradually add the simple elixir, stirring well, and filter.

**Elixir Rhubarb and Magnesia.**

Magnesium sulphate.....640 grains  
Elixir of rhubarb, enough  
to make..... 1 pint  
Dissolve the salt in the elixir.

**Elixir Rhubarb and Potassium Compound (Alkaline Elixir).**

Fluidextract of rhubarb..  $\frac{1}{2}$  fl. ounce  
Potassium bicarbonate.....320 grains  
Oil of cinnamon.....5 drops  
Spirit of peppermint..... 1 fl. dram  
Elixir, enough to make... 1 pint  
Dissolve the salt in 8 ounces of elixir. Mix the fluidextract, spirit and oil with 7 ounces of elixir. Mix both solutions, let stand 24 hours, and filter, adding enough elixir to make one pint.

**Elixir Rubrum (Red elixir).**

Any of the colorless elixirs, described under Elixir Simple, may be colored with solution of carmine, cochineal, or tincture of cudbear.

**Elixir Saccharin.**

See Elixir Simplex without sugar.

**Elixir Senna.**

Fluidextract of senna..... 2 fl. ounces  
Elixir ..... 14 fl. ounces  
Mix, filter with talcum.

**Elixir Senna Compound.**

Fluidextract of senna ..... 2 fl. ounces  
Fluidextract of rhubarb ..  $\frac{1}{2}$  fl. ounce  
Fluidextract of jalap .....  $\frac{1}{2}$  fl. ounce  
Fluidextract of podophyl-  
lum .....  $\frac{1}{4}$  fl. ounce  
Elixir, enough to make... 1 pint  
Mix, let stand 24 hours, and filter with talcum.

**Elixir Sodium Bromide.**

Sodium bromide.....960 grains  
Elixir, enough to make... 1 pint  
Dissolve the bromide in the elixir.



**Elixir Strontium Salts.**

Strontium salt.....640 grains  
Elixir, enough to make.... 1 pint  
Dissolve the salt in the elixir.

**Elixir Strontium Salicylate Compound.**

Strontium salicylate .....640 grains  
Strontium iodide.....128 grains  
Wine of colchicum.....640 minims  
Tincture of gelsemium.....256 grains  
Elixir, enough to make.... 1 pint  
Dissolve the salts in 12 ounces of elixir, add the wine and tincture and enough elixir to make 1 pint. Filter.

**Elixir of Sumbul, Compound.**

Fluidextract of sumbul....2½ fl. ounces  
Fluidextract of scutellaria 1 fl. ounce  
Fluidextract of valerian .. 2 fl. drams  
Talcum ..... 4 drams  
Adjuvant elixir, enough to make..... 1 pint

Rub the fluidextract of sumbul with the talcum, add 12 ounces of the elixir and filter; to the filtrate add enough of the elixir to make the whole measure 1 pint.

**Elixir Terpin Hydrate.**

Terpin hydrate.....128 grains  
Alcohol ..... 1 fl. ounce  
Elixir ..... 15 fl. ounces

Dissolve the terpin hydrate in the alcohol with the aid of a gentle heat. Add the elixir.

**Elixir Terpin Hydrate and Codeine.**

Codeine phosphate..... 32 grains  
Elixir of terpin hydrate.. 1 pint  
Dissolve the codeine in the elixir.

**Elixir Terpin Hydrate and Heroin.**

Heroin hydrochloride..... 10 grains  
Elixir of terpin hydrate.. 1 pint  
Dissolve the heroin in the terpin hydrate.

**Elixir Viburnum Compound (Elixir Cramp Bark).**

Fluidextract of viburnum opulus ..... 2 fl. ounces  
Fluidextract of trillium ..1½ fl. ounces  
Fluidextract of aletris ....1½ fl. ounces  
Elixir adjuvans..... 11 fl. ounces

Mix, let stand for 24 hours, and filter.  
**Elixir Viburnum Prunifolium.**

**(Elixir Black Haw).**

Fluidextract of black haw 2 fl. ounces  
Tincture of cardamom comp. .... 1 fl. ounce  
Elixir ..... 13 fl. ounces  
Mix, let stand a few days, and filter.

**Elixir Yerba Santa.**

Fluidextract of yerba santa ..... 2 fl. ounces  
Elixir ..... 14 fl. ounces  
Mix, let stand for 24 hours, and filter through talcum.

**Elixir Yerba Santa Compound.**

Fluidextract of yerba santa ..... 1 fl. ounce  
Fluidextract of licorice .. 1 fl. ounce  
Tincture of sweet orange peel ..... 1 fl. ounce  
Elixir ..... 13 fl. ounces  
Mix, let stand for 24 hours, and filter with talcum.

**Cordials.**

Cordials differ from elixirs by containing less alcohol. The name is applied generally to aromatic preparations without any special medicinal virtue.

**Cordial of Anise.**

Oil of anise..... 20 drops  
Alcohol ..... 2 fl. ounces  
Syrup ..... 6 fl. ounces  
Water ..... 8 fl. ounces  
Dissolve the oil in the alcohol, add the syrup gradually, shaking after each addition, add the water and filter through talcum or magnesium carbonate.

**Cordial of Cinnamon.**

This cordial is made like anise cordial, taking oil of cinnamon in place of oil of anise. It is generally colored with caramel.

**Cordial of Cloves.**

This cordial is made like anise cordial, taking oil of cloves instead of oil of anise. Color with caramel.

**Cordial of Peppermint.**

This cordial is made like anise cordial, taking oil of peppermint in place of oil of anise. It is generally colored green with chlorophyll.

**Cordial of Wintergreen.**

This cordial is made like anise cordial, taking oil of wintergreen in place of oil of anise.

**Cordial of Ginger.**

Tincture of ginger ..... ½ fl. ounce  
Tincture of capsicum ..... 5 drops  
Spirit of cloves (1:10)..... 5 drops  
Spirit of cinnamon (1:10).. 5 drops  
Alcohol ..... 2 fl. ounces  
Syrup ..... 6 fl. ounces  
Water, enough to make.... 1 pint  
Mix the tincture and spirits with the alcohol, add the syrup gradually, shaking after each addition, add the water, shake and filter through talcum.  
Color with caramel, if required.

**Cordial of Lime Juice.**

Lime juice ..... 5 fl. ounces  
Syrup ..... 10½ fl. ounces  
Alcohol ..... ½ fl. ounce  
Oil of orange ..... 3 drops  
Oil of nutmeg ..... 3 drops  
Salicylic acid..... 5 grains  
Dissolve the oils and acid in the alcohol, mix with the syrup and the lime juice. Shake well and strain.

**SYRUPS.**

In the following formulas syrup is understood to be the official syrup of the U. S. Pharmacopoeia, using 850 grammes of sugar to make 1000 cc. of syrup, or about 7 pounds of sugar dissolved in 58 fluid ounces of water, to make about 1 gallon of syrup.

**Syrup Acid Carbolic.**

Pure carbolic acid..... 1 dram  
Glycerin ..... 1 fl. ounce  
Syrup ..... 15 fl. ounces  
Dissolve the carbolic acid in the glycerin and add the syrup.

**Syrup Acid Hydrobromic.**

Hydrobromic acid, diluted 1 fl. ounce  
Syrup ..... 15 fl. ounces  
Mix.

**Syrup Ammonium Muriate.**

Ammonium chloride.....640 grains  
Syrup, enough to make.... 1 pint  
Dissolve the ammonium chloride in the syrup with the aid of a gentle heat.

**Syrup Althaea (Syrup of Marshmallow).**

Marshmallow, cut in small pieces..... 1 ounce  
 Water ..... 12 fl. ounces  
 Glycerin ..... 1 fl. ounce  
 Sugar ..... 14 ounces

Macerate the marshmallow in the water for 12 hours; strain and filter until 8 ounces have passed through. Add the sugar and glycerin, heat to boiling, skim and strain.

**Syrup Anise.**

Oil of anise..... 8 minims  
 Syrup ..... 1 pint

Rub the oil with a few drops of syrup in a mortar, adding more syrup gradually.

**Syrup Apomorphine.**

Apomorphine hydrochloride 4 grains  
 Dilute hydrochloric acid.. 2 fl. drams  
 Rectified spirit..... 6 fl. drams  
 Distilled water..... 6 fl. drams  
 Syrup, enough to make.... 1 pint

Mix the rectified spirit and the distilled water, dissolve the hydrochloride of apomorphine by the aid of the hydrochloric acid, and mix with the syrup.

**Syrup Aralia Compound (Syrup Spikenard).**

Fluidextract of spikenard.. 1 fl. ounce  
 Fluidextract of yellow dock ..... ½ fl. ounce  
 Fluidextract of burdock .. ½ fl. ounce  
 Fluidextract of guaiac .... ½ fl. ounce  
 Fluidextract of sassafras .. ½ fl. ounce  
 Fluidextract of prickly ash ..... ¼ fl. ounce  
 Fluidextract of calamus ... ¼ fl. ounce  
 Syrup, enough to make.... 16 fl. ounces

Mix the fluidextracts with the syrup.

**Syrup Asarum Compound (Syrup of Canada Snakeroot).**

Fluidextract of Canada snakeroot ..... 1 fl. ounce  
 Potassium carbonate..... 25 grains  
 Wine of ipecac..... ¼ fl. ounce  
 Syrup, enough to make.... 1 pint

Dissolve the carbonate in the fluidextract, add the wine and syrup.

**Syrup Benzoin.**

Rub tincture of benzoin, 1 fluid ounce, with magnesium carbonate, 120 grains, and sugar, 1 ounce; then triturate with 8 fluid ounces of water, filter, add 14 troy ounces of sugar, and dissolve with the aid of a gentle heat. When first made the syrup is of a somewhat lighter color than syrup tolu; but upon straining it becomes of a golden yellow, slightly tinged with green. Its flavor is agreeable, vanilla like, and preferable to that of tolu.

**Syrup Blackberry Aromatic.**

Fluidextract of blackberry. 2 fl. ounces  
 Fluidextract aromatic..... ¼ fl. ounce  
 Syrup ..... 13¼ fl. ounces

Mix.

**Syrup of Bloodroot.**

Fluidextract of bloodroot. 2 fl. ounces  
 Diluted acetic acid..... ½ fl. ounce  
 Syrup ..... 13½ fl. ounces

Mix them.

**Syrup of Buckthorn.**

Fluidextract of buckthorn. 1 fl. ounce  
 Fluidextract, aromatic.... ¼ fl. ounce  
 Syrup ..... 14¼ fl. ounces

Mix them.

**Syrup of Butternut.**

Fluidextract of butternut.. 1 fl. ounce  
 Syrup ..... 15 fl. ounces

Mix them.

**Syrup Calcium Iodide.**

Lime ..... 180 grains  
 Iodine ..... 72 grains  
 Sugar ..... 1 pound  
 Water, a sufficient quantity

Mix the lime and 2 ounces of sugar, add 8 ounces of water, let stand 2 days, filter, adding enough water to obtain 8 fluid ounces, in which dissolve the sugar without heat.

**Syrup Carrageen Compound (Comp. Syrup of Iceland Moss).**

Iceland moss..... ½ ounce  
 Horehound ..... ½ ounce  
 Liverwort ..... ½ ounce  
 Sugar ..... 1 pound

Boil the Iceland moss, horehound and liverwort in 12 ounces of water for 20 minutes, strain 8 fluid ounces, and in the strained liquid dissolve the sugar with heat.

**Syrup Cascara Sagrada.**

Fluidextract of cascara sagrada, tasteless..... 2 u. ounces  
 Fluidextract of licorice... 1 fl. ounce  
 Syrup ..... 13 fl. ounces

Mix them.

**Syrup Catechu.**

Syrup of catechu is prepared by triturating 12 drams of finely powdered catechu with 12 fluid drams of glycerin, followed with 18 fluid ounces of cinnamon water, and filtering the solution, in which 14 ounces of sugar is dissolved by gentle heat, and straining the syrup while hot.

**Syrup Chamomile.**

Chamomile flowers..... 1 ounce  
 Water, boiling..... 10 fl. ounces  
 Sugar ..... 1 pound

Make an infusion of the chamomile and water, strain 8 fluid ounces, in which dissolve the sugar.

**Syrup Coca.**

Fluidextract of coca..... 1 fl. ounce  
 Syrup ..... 15 fl. ounces

Mix them.

**Syrup Codeine.**

Codeine ..... 16 grains  
 Diluted alcohol..... 1 fl. ounce  
 Sugar ..... 15 fl. ounces

Dissolve the codeine in the alcohol and add the syrup.

**Syrup Coltsfoot.**

Coltsfoot, dried..... 1 ounce  
 Boiling water..... 12 ounces  
 Sugar ..... 1 pound

Macerate the coltsfoot in the water for 6 hours, strain 8 fluid ounces, and in the strained liquid dissolve the sugar.

**Syrup Cubebs.**

Cubeb berries, in No. 30 powder ..... 2 troy ounces  
 Percolate with a mixture of Water ..... 8 parts  
 Alcohol ..... 1 part

Until 8 fluid ounces are obtained. In this tincture dissolve by agitation, without heat, Granulated sugar..... 14 ounces  
 Strain.



**Syrup Figs.**

Figs .....	2 ounces
Water .....	1 pint
Sugar .....	14 ounces

Chop the figs fine and mix with the water, boil till nearly 10 ounces, strain 8 ounces, and in the strained liquid dissolve the sugar.

**Syrup Frostwort.**

Frostwort (the herb).....	2 ounces
Water,	
Alcohol,	
of each a sufficient quantity.	
Sugar .....	16 ounces

Macerate the bruised herb in 4 fluid ounces of diluted alcohol, for 24 hours; percolate with a mixture of 1 part of alcohol to 3 of water, till the liquid comes over nearly free from the taste and color of the plant; then evaporate to  $\frac{1}{2}$  pint, add the sugar, boil for a minute or two, and strain.

**Syrup Fucus Vesiculosus.**

Extract of seawrack.....	1 ounce
Water .....	1 ounce
Syrup .....	14 ounces

Dissolve the extract in the water and add the syrup.

**Syrup Gillenia.**

Gillenia root.....	2 ounces
Diluted alcohol .....	1 pint
Sugar .....	30 troy ounces
Water, sufficient quantity.	

Reduce the gillenia to coarse powder, treat it by displacement with diluted alcohol till 1 pint is obtained. Evaporate to 6 ounces, filter, and add sufficient water to make the liquid measure 1 pint, then add the sugar, and dissolve by the aid of heat.

This syrup has the same proportion of the medicinal ingredient contained in syrup of ipecacuanha, which it resembles in properties, though less agreeable to the taste.

**Syrup Glycerophosphate Compound.**

Calcium glycerophosphate.....	128 grains
Sodium glycerophosphate.....	256 grains
Soluble phosphate iron.....	24 grains
Manganese phosphate.....	16 grains
Strychnine sulphate.....	2 grains
Quinine sulphate.....	64 grains
Glycerophosphoric acid.....	2 fl. drams
Glycerin .....	4 fl. ounces
Syrup, enough to make.....	16 fl. ounces

Dissolve the chemicals in the glycerin, previously warmed, and mixed with the acid, then add enough syrup to make 16 fluid ounces.

**Syrup Grindelia Robusta.**

Fluidextract of grindelia robusta .....	4 ounces
Magnesium carbonate.....	1 ounce
Sugar .....	11 ounces
Water, enough to make.....	16 ounces

Triturate the fluidextract with the carbonate of magnesium and add about 7 ounces of water, stirring well; then filter, adding enough water through the filter to make the filtrate measure 9 fluid ounces; to this add the sugar, dissolve by agitation without heat, and strain.

**Syrup Guarana**

Can be made by mixing 2 ounces of tincture guarana with 14 ounces of simple syrup.

**Syrup Horehound Compound (Comp. Syrup Marrubium).**

Fluidextract of horehound.....	$\frac{1}{2}$ fl. ounce
Tincture of opium.....	$\frac{1}{2}$ fl. ounce
Syrup of tolu.....	15 fl. ounces
Mix.	

**Syrup of Heroin.**

Heroin hydrochloride.....	8 grains
Glycerin .....	4 fl. ounces
Syrup .....	12 fl. ounces

Dissolve the heroin in a portion of the syrup, add the glycerin and the remainder of the syrup.

**Syrup Horehound.**

Fluidextract of horehound.....	3 fl. ounces
Water .....	6 fl. ounces
Sugar .....	14 fl. ounces

Mix the fluidextract with the water, filter, and dissolve the sugar in the filtrate.

**Syrup Horehound Compound.**

Syrup of wild cherry.....	2 fl. ounces
Syrup ipecac.....	1 fl. ounce
Tincture of opium, camphorated .....	4 fl. ounces
Fluidextract of horehound.....	2 fl. ounces
Syrup of tolu.....	7 fl. ounces

Mix.

**Syrup Horehound and Linseed.**

Boil together for 10 minutes 1 ounce of horehound, 2 ounces linseed and 1 pint of water. Strain when cold and dissolve 1 pound of sugar in the decoction. To this add 5 ounces fluidextract of glycyrrhiza, 1 ounce essence of anise, 1 ounce spirit of chloroform, and 3 ounces diluted alcohol. Shake well.

**Syrup Ipecac Compound.**

Syrup of ipecac .....	2 fl. ounces
Syrup of senna .....	10 fl. ounces
Magnesium sulphate.....	1 ounce
Syrup of orange flower, enough to make.....	1 pint

Dissolve the magnesium sulphate in the syrup.

**Syrup Iron Chloride (Weld's Syrup).**

Solution of ferric chloride.....	$\frac{1}{2}$ fl. drams
Citric acid.....	70 grains
Sodium carbonate, crystals.....	120 grains
Glycerin .....	1 fl. ounce
Sugar .....	12 ounces
Water, enough to make.....	16 fl. ounces

Dissolve the citric acid in 6 fluid ounces of water, add the sodium carbonate. When effervescence ceases, add the glycerin and iron solution, let stand 2 days and filter. Dissolve the sugar in the filtered liquid by agitation and add enough water to make 16 fluid ounces.

**Syrup Iron Bromide.**

Iron wire, free from oxide.....	$\frac{1}{2}$ ounce
Bromine .....	553 grains
Refined sugar.....	14 ounces
Distilled water.....	q. s.

Dissolve the sugar in 6 ounces of distilled water, by the heat of a water-bath. Put the iron wire with 4 ounces of distilled water into a glass flask, having a capacity of at least a pint, and surround it with cold water. Then add the bromine in successive quantities; shake occasionally until the froth becomes white, and the reaction is complete. Filter the solution into the warm syrup, and add, if necessary, distilled water to produce a pint. Each fluid dram contains about  $\frac{4}{5}$  grains of iron.

**Syrup Iron Citrate.**

Iron and ammonium citrate .....	256 grains
Hot water.....	1 fl. ounce
Syrup .....	15 fl. ounces

Dissolve the citrate in the water and add the syrup.

**Syrup Iron and Quinine Citrate.**

Iron and quinine citrate,  
soluble ..... 256 grains  
Hot water ..... 1 fl. ounce  
Syrup ..... 15 fl. ounces  
Dissolve the citrate in the water and add  
the syrup.

**Syrup Iron Quinine and Strychnine Citrate.**

Strychnine sulphate ..... 2 grains  
Syrup of iron and quinine  
citrate ..... 1 pint  
Dissolve the strychnine in the syrup.

**Syrup Iron Iodide (tasteless).**

Iodine ..... 378.9 grains  
Iron (card teeth) ..... 90.0 grains  
Acid citric, dry ..... 408.0 grains  
Potassium carbonate, pure ..... 475.0 grains  
Distilled water ..... q. s.  
Syrup, to make ..... 26 ounces  
Weigh accurately 252.6 grains iodine and  
place in a flask of 4 ounce capacity. Add  
the iron and  $\frac{1}{2}$  ounce distilled water; cover  
with a piece of glass and agitate occasionally  
until reaction has ceased and the mixture  
has acquired a green color.

Dissolve the citric acid in 4 fluid ounces of  
water, add the potassium carbonate and let  
stand till effervescence ceases. Mix the two  
solutions and filter. Add syrup to make 26  
ounces.

**Syrup Iron Iodide and Quinine.**

Quinine bisulphate ..... 256 grains  
Hot water ..... 1 fl. ounce  
Syrup of iron iodide ..... 15 fl. ounces  
Dissolve the quinine in the water and add  
the syrup.

**Syrup Juniper.**

Juniper juice ..... 5 fl. ounces  
Glycerin ..... 2 fl. ounces  
Syrup ..... 9 fl. ounces  
Mix.

**Syrup Lactated Pepsin.**

Lactated pepsin ..... 384 grains  
Hydrochloric acid .....  $1\frac{1}{2}$  fl. drams  
Water ..... 8 fl. ounces  
Sugar ..... 14 ounces

Mix the water and acid and add the pep-  
sin. Let stand for 6 hours. Filter and  
dissolve the sugar in the filtrate. This syrup  
is generally colored red with tincture of  
cudbear.

**Syrup Licorice.**

Fluidextract of licorice .... 2 fl. ounces  
Syrup ..... 14 fl. ounces  
Mix.

**Syrup Licorice Extract.**

Extract of licorice ..... 1 ounce  
Glycerin ..... 2 fl. ounces  
Water ..... 6 fl. ounces  
Sugar ..... 14 fl. ounces

Dissolve the extract in the mixed liquids,  
and then dissolve the sugar by agitation.

**Syrup Licorice, Aromatic.**

Fluidextract of licorice ... 2 fl. ounces  
Fluidextract of coriander ... 30 minims  
Fluidextract of fennel ... 20 minims  
Fluidextract of cardamom... 30 minims  
Fluidextract of anise seed. 20 minims  
Syrup, enough to make... 16 fl. ounces

Mix them.

**Syrup Lobelia.**

Vinegar of lobelia ..... 8 fl. ounces  
Sugar ..... 1 pound

Dissolve by aid of a gentle heat, skim and  
strain.

**Syrup Manganese Malate.**

Malate of manganese ..... 1 ounce  
Simple syrup ..... 16 ounces  
Essence of lemon ..... 2 drams

An ounce of the syrup contains 30 grains  
of the manganese compound. The malate  
is obtained by treating manganese carbonate  
with malic acid.

**Syrup Manna.**

Manna ..... 2 ounces  
Water ..... 7 ounces  
Alcohol ..... 1 ounce  
Sugar ..... 7 ounces

Dissolve the manna in a mixture of the  
water and alcohol, filter, and dissolve the  
sugar in the filtrate.

**Syrup Matico.**

Fluidextract of matico .... 2 fl. ounces  
Syrup ..... 14 fl. ounces  
Mix.

**Syrup Matico and Pome-  
granate Bark.**

According to Perret, this syrup is one of  
the surest and most effective astringents  
against dysentery, cholera morbus, acute  
diarrhoea, etc. It is employed in table-  
spoonful to wineglassful doses, either pure  
or diluted with water.

Matico leaves ..... 1 ounce  
Pomegranate bark ..... 1 ounce  
Boiling water ..... 10 fl. ounces  
Sugar ..... 1 pound

Infuse the matico and pomegranate in the  
boiling water for 24 hours, filter the infusion,  
and dissolve the sugar in the filtrate.

**Syrup Morphine.**

Morphine sulphate (or any  
other salt) ..... 16 grains  
Hot water .....  $\frac{1}{2}$  fl. ounce  
Syrup .....  $15\frac{1}{2}$  fl. ounces

Dissolve the morphine in the hot water and  
add the syrup. Mix well.

**Syrup Myrrh.**

Tincture of myrrh ..... 2 drams  
Magnesium carbonate ..... 1 dram  
Sugar ..... 12 ounces  
Water, enough to make... 16 ounces

Rub the tincture with the magnesium car-  
bonate, afterward with 8 ounces of water,  
filter and dissolve in the filtrate the sugar.  
The syrup has an agreeable flavor, makes a  
good vehicle for administering nauseous medi-  
cines, and can be made to take the place of  
syrup of tolu.

**Syrup Opium and Ipecac.**

Deodorized tincture of  
opium .....  $2\frac{3}{4}$  fl. ounces  
Fluidextract of ipecac ..... 128 minims  
Syrup, enough to make... 1 pint

Mix.

**Syrup Peru Balsam.**

Balsam Peru ..... 1 fl. ounce  
Water ..... 8 fl. ounces  
Sugar ..... 14 ounces

Digest the balsam and water in a warm  
place for 24 hours, stirring frequently, filter  
and dissolve the sugar in the filtrate by  
agitation.

**Syrup Poke Root Compound.**

Fluidextract of poke root...  $1\frac{1}{2}$  fl. ounces  
Fluidextract of black  
cohosh ..... 1 fl. ounce  
Fluidextract of prickly  
ash berries .....  $\frac{1}{2}$  fl. ounce  
Syrup ..... 13 fl. ounces

Mix.



**Syrup Opium.**

Deodorized tincture of  
opium ..... 640 minims  
Syrup ..... 15½ fl. ounces  
Mix.

**Syrup Poke Root.**

Fluidextract of poke root.. 3 fl. ounces  
Water ..... 6 fl. ounces  
Sugar ..... 14 ounces  
Mix the fluidextract and the water, filter,  
and dissolve the sugar in the filtrate.

**Syrup Quassia Compound.**

Fluidextract of quassia ... ¼ fl. ounce  
Fluidextract of bloodroot .. ½ fl. ounce  
Fluidextract of senega ... ½ fl. ounce  
Fluidextract of rhubarb .. ½ fl. ounce  
Fluidextract of licorice ... ½ fl. ounce  
Water ..... 6 fl. ounces  
Sugar ..... 14 ounces  
Mix the fluidextracts with the water, filter,  
and dissolve the sugar in the filtrate.

**Syrup Quinine.**

Quinine sulphate.....128 grains  
Water ..... 2 fl. drams  
Diluted sulphuric acid.... 2 fl. drams  
Syrup ..... 15½ ounces  
Dissolve the quinine in the water and acid,  
and add the syrup.

**Syrup Quinine Aromatic.**

Quinine sulphate.....128 grains  
Syrup of yerba santa..... 1 pint  
Rub the quinine in a mortar, add the  
syrup gradually and in small portions.

**Syrup Rhubarb and Potassa  
(Neutralizing Syrup).**

Fluidextract of rhubarb ... 1 fl. ounce  
Fluidextract of golden seal ½ fl. ounce  
Spirit of cinnamon..... ¼ fl. ounce  
Spirit of peppermint..... ¼ fl. ounce  
Potassium bicarbonate.... 256 grains  
Water ..... 8 fl. ounces  
Sugar ..... 16 ounces

Mix the fluidextracts and spirits with the  
water, filter, dissolve the potassium and  
sugar in the filtrate.

**Syrup Rhubarb and Senna.**

Fluidextract of rhubarb .. 1 fl. ounce  
Fluidextract of senna ..... 1 fl. ounce  
Oil of fennel,  
Oil of cinnamon, of each.. 10 drops  
Syrup ..... 14 ounces

Mix the oils with the fluidextracts, stir  
well, and add the syrup in small portions,  
mixing well after each addition.

**Syrup Rue.**

Granulated sugar..... 15 ounces  
Tincture of rue..... 2 fl. ounces  
Distilled water..... 7 fl. ounces  
Dissolve and strain.

**Syrup Senna and Manna.**

Fluidextract of senna ..... 1 fl. ounce  
Spirit of fennel ..... 30 minims  
Spirit of coriander ..... 30 minims  
Manna .. 5 ounces  
Sugar ..... 12 ounces  
Hot water..... 7 fl. ounces

Dissolve the sugar and manna in the water,  
add the fluidextract and spirits and mix.  
Strain.

**Syrup Strontium Bromide.**

Strontium bromide..... 2 ounces  
Water ..... 2 fl. ounces  
Syrup, enough to make... 16 fl. ounces  
Dissolve the bromide in the water, add the  
syrup and mix well.

**Syrup Stillingia Compound.**

Fluidextract of stillingia . 1 fl. ounce  
Fluidextract of corydalis . 1 fl. ounce  
Fluidextract of blue flag.. ½ fl. ounce  
Fluidextract of elder flow-  
ers ..... ½ fl. ounce  
Fluidextract of prince's  
pine ..... ½ fl. ounce  
Fluidextract of prickly ash  
berries ..... ¼ fl. ounce  
Fluidextract of coriander . ¼ fl. ounce  
Sugar ..... 14 ounces  
Water, quantity sufficient.

Mix the fluidextracts and add water to  
make 7½ fluid ounces; filter if need be and  
wash to obtain 7½ fluid ounces. In this dis-  
solve the sugar, using as little heat as  
possible, and add water to make 1 pint.

**Syrup Sodium Bromide.**

Sodium bromide.....640 grains  
Water, boiling ..... 1 ounce  
Syrup, enough to make... 16 fl. ounces  
Dissolve the sodium bromide in the water  
and add the syrup. Mix.  
This syrup is often colored pink by adding  
½ ounce (or more) of tincture of cudbear.

**Syrup Tar and Wild Cherry.**

Glycerole of tar..... 3 fl. ounces  
Syrup of tolu ..... 3 fl. ounces  
Syrup of squills ..... 1 fl. ounce  
Tincture of opium.....1½ fl. ounces  
Fluidextract of ipecac..... 64 minims  
Syrup of wild cherry,  
enough to make..... 1 pint  
Mix them.

**Syrup Tar and Iodine.**

Tar water ..... 7 fl. ounces  
Sugar ..... 14 fl. ounces  
Tincture of iodine.....256 minims  
Glycerin ..... 2 fl. ounces  
Dissolve the sugar in the tar water, mix  
the tincture of iodine with the glycerin, and  
add to the syrup. Mix well.

**Syrup Terebene.**

Terebene ..... 320 minims  
Acacia, powdered..... ½ ounce  
Syrup, enough to make... 1 pint  
Water ..... 1 fl. ounce  
Mix the terebene with the acacia in a mor-  
tar, add the water gradually, stirring well,  
then add the syrup gradually. In place of  
syrup, syrup of wild cherry may be used.

**Syrup of Terpin Hydrate.**

Terpin hydrate.....128 grains  
Alcohol ..... 1 fl. ounce  
Syrup, enough to make... 1 pint  
Dissolve the terpin hydrate in the alcohol  
and add the syrup slowly. An improved  
syrup of terpin hydrate may be made with  
a mixture of equal parts of syrup of tolu  
and wild cherry.

**Syrup of Terpin Hydrate and Codeine.**

Codeine phosphate..... 16 grains  
Syrup of terpin hydrate.. 1 pint  
Dissolve the codeine in the syrup.

**Syrup of Terpin Hydrate and Heroin.**

Heroin hydrochloride..... 8 grains  
Syrup of terpin hydrate.. 1 pint  
Dissolve the heroin in the syrup.

**Syrup Wintergreen.**

Oil of wintergreen..... 5 drops  
Syrup ..... 1 pint  
Caramel, enough to color.  
Rub the oil in a mortar with a little hot  
syrup, adding more of the syrup gradually.  
Color with caramel as required.

**Syrup Turpentine.**

Oil of turpentine.....	1 fl. ounce
Acacia, powdered.....	½ ounce
Water .....	1 fl. ounce
Glycerin .....	2 fl. ounces
Syrup of tolu, enough to make .....	16 fl. ounces

Rub the oil of turpentine with the acacia in a mortar, add the water and make an emulsion, add the syrup and glycerin and mix well.

**Syrup of White Pine (Syrup Pini Pumilionis).**

Oil of pinus pumilio.....	½ fl. ounce
Magnesium carbonate.....	1 ounce
Alcohol .....	1 fl. ounce
Tincture of crocus.....	1 fl. ounce
Glycerin .....	2 fl. ounces
Syrup, enough to make....	1 pint

Rub the oil with the magnesium carbonate, and successively the alcohol, the tincture, glycerin and 10 ounces of syrup. Filter and add enough syrup to make 1 pint.

**Syrup White Pine Compound.  
(Syrupus Pini Strobi).**

White pine bark.....	1½ ounces
Wild cherry bark.....	1½ ounces
Spikenard root.....	75 grains
Balm of gilead buds.....	75 grains
Sassafras bark.....	50 grains
Morphine sulphate.....	8 grains
Chloroform .....	90 minims
Sugar .....	12 ounces
Water and alcohol, enough to make.....	1 pint

Reduce the drugs to a fine powder, moisten and percolate with a mixture of one part of alcohol and 7 parts of water, until 8 fluid ounces are obtained. Dissolve in this percolate the morphine and the sugar, add the chloroform, shake till it is dissolved, and add enough water to make 1 pint.

**Syrup Wild Cherry Compound.**

Fluidextract of wild cherry.....	2½ fl. ounces
Fluidextract of ipecac .....	½ fl. ounce
Fluidextract of bloodroot .....	½ fl. ounce
Morphine sulphate.....	8 grains
Tartar emetic.....	2 grains
Simple syrup, sufficient to make.....	1 pint

Dissolve the morphine and the tartar emetic in 2 fluid ounces of syrup with a gentle heat, add the fluidextracts and enough syrup to make one pint. Mix well.

**Syrup Wild Cherry and Horehound.**

Wild cherry bark, coarse powder .....	4 ounces
Horehound, coarse powder .....	1 ounce
Glycerin .....	1 ounce
Alcohol .....	1 ounce
Sugar .....	12 ounces
Water, enough to make....	16 ounces

Mix the glycerin and alcohol with 8 ounces of water. Having moistened the drugs with a sufficient quantity of the menstruum, pack them in a percolator, add the remainder of the menstruum and enough water to make the percolate measure 8 ounces. In this dissolve the sugar, without heat, and strain.

**Syrup Yellow Dock Compound.  
(Syrup Rumex Compound).**

Fluidextract of yellow dock .....	2 fl. ounces
Fluidextract of American ivy .....	½ fl. ounce
Fluidextract of figwort .....	½ fl. ounce
Syrup, enough to make....	16 fl. ounces

Mix.

**Syrup Yerba Santa.**

Fluidextract of yerba santa .....	2 ounces
Magnesium carbonate.....	1 ounce
Sugar .....	11 ounces
Water, enough to make....	16 ounces

Triturate the fluidextract with the carbonate of magnesium, and add about 7 fluid ounces of water, stirring well. Filter, adding enough water, through the filter, to make the filtrate measure 9 fluid ounces. In this dissolve the sugar by agitation, without heat, and strain.

**Syrup Yerba Santa Compound (Aromatic  
Syrup of Yerba Santa).**

Yerba santa.....	2 ounces
Orange peel.....	½ ounce
Cinnamon .....	6 grains
Clover .....	40 grains
Alcohol and water, a sufficient quantity.....	

Sugar .....

Reduce the drugs to a coarse powder, moisten with a mixture of 1 part of alcohol and 7 parts of water, put in a percolator; let stand 24 hours, and percolate 8 fluid ounces. Dissolve the sugar in the percolate by agitation and add enough water to make 1 pint.

**Syrup Zinc Phosphate.**

Zinc phosphate.....	256 grains
Water .....	1 fl. ounce
Diluted phosphoric acid....	4 fl. drams
Syrup, to make.....	16 fl. ounces

Dissolve the zinc salt in the water and acid, and filter into the syrup. Mix well.

**WINES.****Wine Aloes.**

Aqueous extract of aloes.....	½ ounce
Tincture of cardamom.....	½ fl. ounce
Tincture of ginger.....	½ fl. ounce
White wine, enough to make .....	1 pint

Dissolve the extract in 14 ounces of wine, add the tinctures, let stand 24 hours, filter, and add enough wine to make 1 pint.

**Wine Antiscorbutic.**

Horseradish root.....	1 ounce
Scurvy grass.....	½ ounce
Watercress leaves.....	½ ounce
Mustard seed.....	¼ ounce
Ammonium chloride.....	1 dram
White wine, enough to make .....	1 pint

Reduce the drugs to a coarse powder and macerate in 1 pint of wine for 8 days, add the ammonium chloride, filter, and add enough wine to make 1 pint.

**Wine Aromatic.**

Lavender flowers.....	72 grains
Origanum .....	72 grains
Peppermint leaves.....	72 grains
Rosemary .....	72 grains
Sage .....	72 grains
Wormwood .....	72 grains
White wine, enough to make .....	1 pint

Reduce the drugs to a coarse powder and percolate with white wine, until 1 pint is obtained.

**Wine of Beef.**

Extract of beef.....	1 ounce
Elixir .....	4 fl. ounces
Wine .....	12 fl. ounces

Dissolve the extract in the elixir and wine, and filter.



**Wine Aromatic.**

Cinnamon .....	½ ounce
Nutmeg .....	½ ounce
Cloves .....	½ ounce
White wine, enough to make .....	1 pint

Reduce the drugs to a fine powder, macerate with the wine for 8 days, shaking often, filter, and add enough wine to make 1 pint.

**Wine Beef and Iron.**

Soluble iron phosphate....	64 grains
Wine of beef (detannated) 1 pint	

Dissolve the iron salt in 2 drams of hot water, add to the wine, and filter.

**Wine Beef and Iron.**

Citrate of iron and am- monia .....	64 grains
Wine of beef (detannated) 1 pint	

Dissolve the iron salt in the wine and filter.

**Wine Beef and Iron.**

Extract of beef.....	½ ounce
Wine of iron.....	1 pint
Dissolve and filter.	

**Wine Beef and Iron (Aromatic).**

To make aromatic wine of beef and iron, essences of various kinds may be added, before filtering, for instance essence of cinnamon, cloves, lemon, orange, etc. One-half fluid ounce of the combined essences is generally sufficient to flavor one pint of wine.

**Wine Beef Iron and Cinchona.**

Quinine sulphate.....	5 grains
Cinchonidine sulphate....	10 grains
Wine of beef and iron....	1 pint

Dissolve the salts in the wine and filter.

**Wine Calisaya, or Cinchona.**

Quinine sulphate.....	8 grains
Cinchonidine sulphate....	12 grains
Elixir .....	4 fl. ounces
Wine .....	12 fl. ounces

Mix the elixir and wine, rub the salts with a portion of the mixture, then add the remainder, color with cudbear or caramel, as desired, and filter.

**Wine Calisaya, or Cinchona.**

Calisaya bark, ground fine	1 ounce
Essence of orange .....	¼ fl. ounce
Essence of cassia .....	¼ fl. ounce
Tincture of cardamom.....	1 fl. dram
Sherry wine.....	1 pint

Mix the liquids and add the calisaya bark, macerate for 8 days, shaking often, and filter.

**Wine Calisaya, or Cinchona.**

Tincture of cinchona.....	3 fl. ounces
Glycerin .....	3 fl. ounces
White wine.....	10 fl. ounces

Mix, let stand for 8 days, and filter.

**Wine Calisaya, or Cinchona, Compound.**

Calisaya bark, powdered..	1½ ounces
Bitter orange peel, pow- dered .....	1 dram
Chamomile, bruised.....	2 drams
White wine.....	1 pint

Macerate for 8 days, and filter.

**Wine Calisaya, or Cinchona, with Iron.**

Wine of calisaya (detan- nated .....	1 pint
Soluble iron salt.....	64 grains

Dissolve the salt in the wine and filter. The citrate of iron and ammonia is the salt most commonly used. If desired, other salts, as the phosphate, pyrophosphate or lactate may be used.

**Wine Calisaya (or Cinchona) with Iron and Strychnine.**

Strychnine sulphate.....	2 grains
Wine calisaya and iron...	1 pint
Dissolve.	

**Wine Camphor.**

Camphor .....	128 grains
Alcohol .....	½ fl. ounce
Wine .....	15½ fl. ounces

Dissolve the camphor in the alcohol and add the wine gradually. Filter.

**Wine Cascara Sagrada.**

Fluidextract of cascara, aromatic .....	2 fl. ounces
Wine .....	14 fl. ounces

Mix, set aside for 2 days, and filter.

**Wine Cascara Sagrada.**

White gelatin.....	10 grains
Water, boiling.....	2 drams
White wine.....	14 ounces
Tasteless fluidextract of cascara .....	2 fl. ounces
Sugar .....	1 ounce

Dissolve the gelatin in the water and add the other ingredients. Set aside for a week, and filter.

**Cassis Wine, or Cordial (Green).**

Fresh black currant leaves	1 ounce
Diluted alcohol.....	2 fl. ounces
Syrup .....	2 fl. ounces
White wine, enough to make .....	1 pint

Bruise the leaves and add the diluted alcohol, let stand 24 hours, add the other ingredients and macerate again for 24 hours. Express and filter, adding enough wine to make 1 pint.

**Cassis Wine, or Cordial (Red).**

Black currants, withered on the bush.....	2 ounces
Diluted alcohol .....	2 fl. ounces
Syrup .....	2 fl. ounces
White wine.....	12 fl. ounces

Mix the liquids and macerate the berries for 8 days. Express and filter.

Flavoring essences of various kinds may be added to this and the preceding wines.

**Wine China (Chinawein).**

See under Wine Calisaya.

**Wine Coca.**

Coca leaves, in coarse powder .....	3 ounces
Elixir .....	5 fl. ounces
White wine .....	12 fl. ounces
Mix, macerate 8 days, filter.	

**Wine Coca.**

Fluidextract of coca.....	2 fl. ounces
White wine, enough to make .....	1 pint

Mix the fluidextract in a mortar with a little magnesium carbonate, add the 14 fluid ounces wine slowly, filter and add enough wine through the filter to make 1 pint.

**Wine Coca.**

Coca leaves, powdered....	3 fl. ounces
Coffee, finely ground....	½ ounce
Elixir .....	4 fl. ounces
White wine, enough to make .....	1 pint

Mix the elixir and 12 ounces of wine, macerate in it the drugs for eight days, filter, and add enough wine through the filter to make 1 pint.

**Wine Coca.**

Fluidextract of coca..... 2 fl. ounces  
 Syrup of coffee..... 3 fl. ounces  
 White wine, enough to  
 make ..... 1 pint  
 Mix and filter through carbonate of mag-  
 nesia or talcum, add enough wine to make  
 1 pint.

**Wine Coca.**

Fluidextract of coca..... 2 fl. ounces  
 Port wine, enough to make 1 pint  
 Mix and filter through magnesia.

**Coca Kola Wine.**

Coca leaves..... 1 ounce  
 Kola nuts..... ½ ounce  
 Port wine, enough to make 1 pint  
 Reduce the drugs to a coarse powder,  
 macerate in 1 pint of wine for 8 days, filter,  
 and add enough wine to obtain 1 pint.

**Coca Kola Wine.**

Fluidextract of coca ..... 1 fl. ounce  
 Fluidextract of kola ..... ½ fl. ounce  
 Port wine, enough to make 1 pint  
 Mix and filter through magnesia.

**Wine Coca and Beef.**

Extract of beef..... 1 ounce  
 Wine of coca..... 1 pint  
 Mix and filter.

**Wine Cod Liver Oil (Wine Morrhua).**

Extract of cod liver oil.. ½ ounce  
 Tincture of vanilla..... 1 fl. ounce  
 Port wine, enough to make 1 pint  
 Dissolve the extract in 14 ounces of wine  
 and add the tincture. Let stand 24 hours  
 and filter through talcum. Add enough wine  
 to make 1 pint.

**Wine Cod Liver Oil and Pancreatin.**

Pancreatin ..... 40 grains  
 Wine of cod liver oil..... 1 pint  
 Mix and filter.

**Wine Colchicum.**

Colchicum corn, powdered 1 ounce  
 Sherry wine..... 1 pint  
 Mix, macerate 8 days, and filter.

**Wine Comfrey Compound.**

Fluidextract of comfrey ..100 minims  
 Fluidextract of Solomon's  
 seal .....100 minims  
 Fluidextract of helonias ..100 minims  
 Fluidextract of chamomile.. 50 minims  
 Fluidextract of gentian ... 50 minims  
 Fluidextract of calumba ... 50 minims  
 Fluidextract of cardamom.. 50 minims  
 Fluidextract of sassafras . 50 minims  
 Sherry wine..... 15 fl. ounces  
 Mix, and after standing several days, fil-  
 ter and wash with sherry to obtain 1 pint.

**Wine Condurango.**

Fluidextract of condurango 1 fl. ounce  
 Malaga wine..... 2 fl. ounces  
 Elixir ..... 3 fl. ounces  
 Mix and filter through talcum.

**Wine Condurango.**

Condurango bark, in coarse  
 powder .....1½ ounces  
 Sherry wine..... 1 pint  
 Macerate for 8 days, filter.

**Wine Condurango.**

Fluidextract of condurango 12 fl. ounces  
 Sherry wine..... 15 fl. ounces  
 Mix and filter through talcum.

**Wine Cotton Root (Wine Gossypium).**

Fluidextract of cotton root  
 bark ..... 2 fl. ounces  
 Elixir ..... 4 fl. ounces  
 White wine..... 10 fl. ounces  
 Mix, let stand 3 days and filter.

**Wine Creosote.**

Beechwood creosote..... 2 fl. drams  
 Comp. tincture of gentian ½ fl. ounce  
 Alcohol ..... 4 fl. ounces  
 White wine, enough to  
 make ..... 1 pint  
 Mix the creosote with the alcohol, add the  
 tincture and the wine, shake and filter.

**Wine Creosote.**

Beechwood creosote..... ½ fl. ounce  
 Glycerin ..... 2 fl. ounces  
 Water ..... 1 fl. ounce  
 Alcohol ..... 1 fl. ounce  
 Magnesium carbonate..... ¼ ounce  
 Syrup ..... 4 fl. ounces  
 White wine, enough to  
 make ..... 1 pint  
 Rub the creosote with the magnesium car-  
 bonate, add the glycerin and water, filter.  
 To the filtrate add the syrup and 8 ounces  
 of wine, filter again, and add enough wine  
 to make 1 pint.

**Wine of Damiana (Wine Turneria).**

Fluidextract of damiana.. 3 fl. ounces  
 Elixir ..... 3 fl. ounces  
 Wine ..... 10 fl. ounces  
 Mix, and filter after 8 days.

**Wine Damiana Compound.**

Fluidextract of damiana .. 2 fl. ounces  
 Fluidextract of ginseng ... ½ fl. ounce  
 Tincture of nux vomica.. 2 fl. drams  
 Port wine.....11½ fl. ounces  
 Mix, and filter after 8 days.

**Wine Detannated.**

Wine ..... 1 gallon  
 Fresh milk..... 6 fl. ounces  
 Mix, and let stand 3 days, shaking often,  
 filter.  
 This is an easy and reliable method to  
 detannate wine, care being taken that the  
 milk is free from preservatives.

**Wine Detannated.**

Wine ..... 1 gallon  
 Gelatin, finely cut..... ¼ ounce  
 Macerate the gelatin in the wine for two  
 weeks, shaking often. Filter.

**Wine Diastase.**

Diastase ..... 1 dram  
 White wine ..... 1 pint  
 Mix, and allow to stand for 24 hours, and  
 filter.

**Wines of Fruit.**

Fruit wines are but little used to-day.  
 However, here is a formula, which is ap-  
 plicable to black currants, raspberries, straw-  
 berries, elderberries, oranges and similar  
 fruit.

Press the juice from the ripe berries through  
 a cloth; to every quart of the juice add 2  
 quarts of water, 2 pounds of sugar and 3  
 drams of tartaric acid previously dissolved  
 in the water. Put all into a clean barrel  
 full to the top, closing it with a piece of  
 canvas. To every quart add 1 dram of com-  
 pressed yeast. Keep at a temperature of  
 about 65°F. and after six weeks draw off  
 into another barrel and keep it from 6 to  
 8 weeks when it will be ready for bottling.

**Wine Gentian Compound.**

Extract of gentian.....	¼ ounce
Wine .....	1 pint
Tincture of sweet orange peel .....	½ fl. ounce
Tincture, aromatic.....	½ fl. ounce

Dissolve the extract in the wine, add the tincture and filter through talcum.

**Wine Gentian Wine Bitters Compound.**

Fluidextract of gentian ..	128 minims
Fluidextract of calumba ..	64 minims
Fluidextract of prickly ash ..	64 minims
Fluidextract of rhubarb ..	64 minims
Fluidextract of sassafras ..	64 minims
Fluidextract of cardamom..	64 minims
Sherry wine, enough to make .....	1 pint

Mix, and after standing several days filter and pass enough sherry wine through the paper to obtain 1 pint.

**Wine Hops.**

Fluidextract of hops.....	1 fl. ounce
Port wine.....	16 fl. ounces

Mix and filter through talcum.

**Wine, Hops and Pepsin.**

Fluidextract of hops.....	1 fl. ounce
Soluble pepsin.....	64 grains
Water .....	1 ounce
Alcohol .....	1 ounce
Spirit of orange (1 in 18)	30 minims
Hydrochloric acid (10 per cent.) .....	½ dram
Sherry wine, enough to make .....	1 pint

Dissolve the pepsin in the water with the aid of hydrochloric acid; add slowly and with constant stirring, 10 fluid ounces sherry wine; then add the fluidextract of hops and alcohol, containing the spirit of orange, and lastly enough sherry wine to make 1 pint; filter and wash with sherry wine until 1 pint is obtained. Each fluid ounce of this preparation represents substantially 40 grains of saccharated pepsin and 30 grains of hops.

**Wine Iodine.**

Iodine .....	64 grains
Wine, detannated.....	1 pint

Dissolve and filter.

**Wine Iron.**

Soluble iron phosphate....	256 grains
Elixir .....	4 fl. ounces
Water, boiling .....	1 fl. ounce
Wine, detannated, enough to make .....	1 pint

Dissolve the iron in the water, add elixir and 10 ounces of wine, filter, and add enough wine to make 1 pint.

**Wine Iron.**

Iron and ammonium citrate .....	256 grains
Elixir .....	4 fl. ounces
Water .....	1 fl. ounce
Wine, detannated, enough to make .....	1 pint

Proceed as in the preceding.

**Wine Iron, Sweet.**

Iron and ammonium citrate .....	256 grains
Sweet Malaga wine, detannated .....	1 pint

Dissolve and filter.

**Wine Kola.**

Fresh kola nuts, bruised..	1 ounce
Port wine .....	1 pint

Macerate for 8 days, and filter.

**Wine of Iron, Bitter.**

Iron and ammonium citrate .....	256 grains
Quinine sulphate.....	5 grains
Cinchonidine sulphate....	3 grains
Tincture of fresh orange peel .....	2 fl. ounces
Alcohol .....	2 fl. ounces
Oil of cinnamon .....	2 drops
Oil of caraway .....	2 drops

Sherry wine, detannated, enough to make..... 1 pint

Dissolve the iron, quinine and cinchonidine in 8 ounces of wine, mix the tincture, alcohol and oils, add to the wine and enough wine to make 1 pint. Filter through talcum.

**Wine Kola.**

Fluidextract of kola.....	1 fl. ounce
Port wine.....	1 pint

Mix and filter.

**Wine Kola, Tonic.**

Fluidextract of kola.....	1 fl. ounce
Tincture of nux vomica...	2 fl. drams
Syrup of orange.....	2 fl. ounces

Malaga wine, enough to make .....

1 pint

Mix, set aside for 8 days, and filter.

**Wine Lupulin.**

Tincture of lupulin.....	1½ fl. ounces
Malaga wine.....	14½ fl. ounces

Mix and filter through talcum.

**Wine Mitchella.**

Fluidextract of squaw vine	4 ounces
Alcohol .....	1½ ounces
Water .....	1½ ounces

Stronger white wine, q. s. to make..... 1 pint

Mix. Allow to stand 24 hours and filter.

**Wine Mitchella Compound.**

Fluidextract of squaw vine..	4 ounces
Fluidextract of unicorn root	1 ounce
Fluidextract of cramp bark	1 ounce
Fluidextract of blue cohosh	1 ounce
Compound wine of orange (N. F.) q. s. to.....	1 pint

Mix. Allow to stand 24 hours and filter.

**Wine Orange.**

Tincture of fresh orange peel .....	4 fl. ounces
White wine.....	12 fl. ounces

Mix and filter.

See also "Wines of Fruits."

**Wine Pancreatin.**

Powdered pancreatin.....	256 grains
White wine.....	16 fl. ounces

Mix and macerate 2 days, with frequent agitation. Filter.

**Wine Pepsin.**

Pepsin .....	256 grains
Hydrochloric acid, dilute..	1 fl. dram
Glycerin .....	1 fl. ounce
Wine .....	15 fl. ounces

Mix in a mortar the pepsin and glycerin, add the diluted acid and the wine. Let stand for a week and filter.

**Wine Quassia.**

Rasped quassia .....	½ ounce
Orange peel, grated.....	¼ ounce
Wine .....	1 pint

Macerate for 24 hours and filter.

**Wine Quinine.**

Quinine hydrochloride....	64 grains
Orange wine.....	1 pint

Dissolve and filter.



**Wine Quinine.**

Quinine sulphate..... 32 grains  
 Madeira wine..... 1 pint  
 Dissolve and filter.

**Wine Rhubarb.**

Rhubarb, in coarse powder 1 ounce  
 Canela, in coarse powder 1 ounce  
 Sherry wine..... 16 ounces  
 Macerate for 8 days and filter.

**Wine Rhubarb, Aromatic.**

Rhubarb ..... 1 ounce  
 Cinnamon .....  $\frac{1}{4}$  ounce  
 Nutmeg .....  $\frac{1}{8}$  ounce  
 Cardamom .....  $\frac{1}{8}$  ounce  
 Port wine..... 1 pint  
 Reduce the drugs to a coarse powder,  
 macerate for 8 days and filter.

**Wine Rhubarb, Aromatic.**

Fluidextract of rhubarb... 1 fl. ounce  
 Oil of cinnamon ..... 5 drops  
 Oil of orange peel..... 10 drops  
 Oil of cloves ..... 3 drops  
 Port wine..... 1 pint  
 Mix, let stand 24 hours, filter through  
 talcum.

**Wine Sarsaparilla Compound.**

Fluidextract of sarsa-  
 parilla ..... 128 minims  
 Fluidextract of china bark 32 minims  
 Fluidextract of guaiac  
 wood ..... 128 minims  
 Fluidextract of licorice  
 root ..... 128 minims  
 Fluidextract of saffrafas . 96 minims  
 Sherry wine, q. s..... 1 pint  
 Mix, and after standing several days, filter  
 and pass enough sherry wine through the  
 paper to make one pint.

**Wine Senna.**

Senna ..... 2 ounces  
 Coriander ..... 1 dram  
 Fennel ..... 1 dram  
 Raisins ..... 2 ounces  
 Wine ..... 1 pint  
 Reduce the drugs to powder, bruise the  
 raisins, macerate in the wine for a week,  
 filter, and add enough wine to make a pint.

**Wine Senna.**

Fluidextract of senna..... 1 fl. ounce  
 Tincture of orange peel..  $\frac{1}{2}$  fl. ounce  
 Tincture, aromatic.....  $\frac{1}{4}$  fl. ounce  
 Wine, enough to make... 1 pint  
 Mix and filter.

**Wine Squill Compound.**

Dried squill..... 1 ounce  
 Orange peel..... 2 drams  
 Juniper berries..... 2 drams  
 Wine ..... 1 pint  
 Reduce the drugs to a coarse powder,  
 macerate for 3 days and filter.

**Wine Tar.**

Tar ..... 2 ounces  
 Water ..... 4 ounces  
 Pumice, powdered..... 3 ounces  
 Alcohol ..... 1 ounce  
 Glycerin ..... 1 ounce  
 Stronger white wine to  
 make ..... 16 fl. ounces

Wash the tar with the water and throw  
 the water solution away; then add the pow-  
 dered pumice to the tar, mix thoroughly;  
 then add the alcohol and glycerin, again mix,  
 and after two hours add the stronger white  
 wine (14 ounces). Shake the mixture fre-  
 quently during 24 hours, then pour on a  
 wetted filter and obtain of the filtrate 16 fluid  
 ounces.

**Wine Tar.**

Pine tar..... 1 ounce  
 Carbonate of magnesium..  $\frac{1}{2}$  ounce  
 Sherry wine, enough to  
 make ..... 1 pint

Rub the tar with the magnesia, add the  
 wine (15 ounces) gradually, transfer to a  
 bottle, shaking repeatedly for 8 days, filter,  
 and add enough wine to make 1 pint.

**Wine Tar.**

Oil of tar..... 2 fl. drams  
 Carbonate of magnesia...  $\frac{1}{2}$  ounce  
 Sugar ..... 2 ounces  
 Alcohol ..... 2 fl. ounces  
 Sherry wine, enough to  
 make ..... 1 pint

Rub the oil with the magnesia and sugar,  
 add the other ingredients, let stand 8 days  
 with frequent agitation, filter and add enough  
 wine through the filter to make 1 pint.

**Wine Tar, Aromatic.**

Oil of tar .....  $\frac{1}{2}$  fl. ounce  
 Oil of cinnamon ..... 10 drops  
 Oil of nutmeg ..... 5 drops  
 Oil of fennel ..... 5 drops  
 Oil of clover ..... 3 drops  
 Oil of bitter almond..... 3 drops  
 Magnesium carbonate...  $\frac{1}{2}$  ounce  
 Wine, enough to make... 1 pint  
 Rub the oils with the magnesia, add the  
 wine (15 fluid ounces) and let stand 2 days,  
 shaking often, filter and add enough wine to  
 make 1 pint.

**Wine Vitalized.**

Spirit of phosphorus..... 128 minims  
 Soluble phosphate of iron. 64 grains  
 Glycerin ..... 1 fl. ounce  
 Water .....  $\frac{1}{2}$  fl. ounce  
 Wine, enough to make... 1 pint  
 Dissolve the iron phosphate in the water,  
 add the glycerin, spirit and wine (14 fluid  
 ounces), filter, and add enough wine to make  
 1 pint.

**Wine of White Ash.**

Take of the inner bark of white ash  
 (*Fraxinus Americana*), in powder, No. 40,  
 2 ounces; sherry wine sufficient for 1 pint.  
 Macerate the bark for three days, pack firmly  
 in a cylindrical percolator, and displace  
 slowly 1 pint. The wine has the color of  
 brown sherry and a taste quite peculiar. The  
 usual dose is a teaspoonful three times a day.

**Wine Wild Cherry.**

Fluidextract of wild cherry 2 fl. ounces  
 Glycerin ..... 1 fl. ounce  
 Elixir ..... 4 fl. ounces  
 White wine ..... 9 fl. ounces  
 Mix and filter after 24 hours.

**Wine Wild Cherry.**

Wild cherry bark, in  
 coarse powder..... 2 ounces  
 Glycerin ..... 1 fl. ounce  
 Elixir ..... 4 fl. ounces  
 Wine ..... 11 fl. ounces  
 Mix the liquids and moisten the wild  
 cherry with it. Pack firmly in a percolator,  
 let stand 24 hours and percolate 1 pint.

**TINCTURES.****Tincture Absinthe (Tincture of Wormwood).**

Wormwood, in coarse powder 3 ounces  
 Diluted alcohol, enough to  
 make ..... 1 pint  
 Make a tincture by maceration or percola-  
 tion, obtaining 1 pint.

**Tincture Absinthe Compound (Compound Tincture of Wormwood).**

Wormwood .....	1 ounce
Gentian .....	$\frac{1}{2}$ ounce
Bitter orange peel.....	$\frac{1}{2}$ ounce
Rhubarb .....	$\frac{1}{4}$ ounce
Aloes .....	20 grains
Cascarilla .....	20 grains
Diluted alcohol, enough to make .....	1 pint

Reduce the drugs to a coarse powder and prepare 1 pint of tincture by maceration or percolation.

This preparation is also known under the name of "Stoughton Bitters."

**Tincture Absinthe Comp. (Compound Tincture of Wormwood)**

Oil of wormwood .....	15 drops
Oil of anise .....	8 drops
Oil of fennel .....	8 drops
Oil of coriander .....	8 drops
Oil of origanum .....	4 drops
Oil of angelica .....	4 drops
Oil of cardamom .....	4 drops
Alcohol, enough to make..	1 pint

Dissolve the oils in the alcohol and color green with chlorophyll.

**Tincture Acid Tannic.**

Tannic acid.....	$\frac{1}{2}$ ounces
Fresh orange peel, powdered .....	$\frac{1}{4}$ ounce
Diluted alcohol, enough to make .....	1 pint

Mix, macerate for 2 days, and filter.

**Tincture Adonis Vernalis.**

Adonis vernalis, in coarse powder .....	2 ounces
Diluted alcohol, enough to make .....	1 pint

Prepare 1 pint of tincture by percolation or maceration.

**Tincture Aloes Crocata (Elixir Proprietatis).**

Aloes .....	1 ounce
Myrrh, .....	
Saffron, of each.....	$\frac{1}{2}$ ounce
Diluted alcohol, enough to make .....	1 pint

Reduce the drugs to a coarse powder, macerate for 8 days and filter, adding enough diluted alcohol to obtain 1 pint.

Note: The formula for this tincture varies somewhat as to the quantity of drugs used, according to different authorities. The name "Elixir Proprietatis," is also applied to the "Tincture Aloes et Myrrhae" U. S. P. which contains no saffron.

**Tincture Aromatic.**

Cinnamon .....	$\frac{1}{2}$ ounces
Ginger .....	$\frac{1}{2}$ ounce
Galangal root, .....	
Cloves, .....	
Cardamom, of each.....	$\frac{1}{4}$ ounce
Diluted alcohol, enough to make .....	1 pint

Reduce the drugs to a fine powder and prepare 1 pint of tincture by percolation or maceration.

**Tincture Balsamic.**

Balsam tolu, .....	
Gum benzoin, of each....	1 ounce
Aloes, .....	
Myrrh, .....	
Olibanum, of each.....	2 drams
Angelica root, powdered..	2 drams
Alcohol, 80%, enough to make .....	1 pint

Prepare 1 pint of tincture by maceration.

**Tincture Antispasmodic.**

Tincture of digitalis.....	$\frac{1}{2}$ fl. ounces
Tincture of opium .....	$\frac{3}{4}$ fl. ounce
Oil of juniper.....	$\frac{1}{4}$ fl. ounce
Diluted alcohol, enough to make .....	1 pint

Mix and filter.

**Tincture Astringent.**

Tannic acid.....	1 ounce
Alcohol .....	10 fl. ounces
Tincture of benzoin.....	$\frac{1}{2}$ fl. ounce
Cologne .....	$\frac{1}{4}$ fl. ounces

Mix. For toilet use.

**Tincture Aurantii Composita.**

Fresh orange peel, fine....	2 ounces
Cinchona bark, powdered..	1 ounce
Gentian root, powdered....	$\frac{1}{2}$ ounce
Diluted alcohol, enough to make .....	1 pint

Prepare 1 pint of tincture by maceration.

**Tincture Benzoin Soluble.**

Mix 3 fluid ounces of alcohol with 8 ounces of glycerin; dissolve in this liquid upon a water bath  $\frac{1}{2}$  ounces of benzoin; add 6 fluid ounces of water and set aside until cold; decant from the precipitated resin the milky liquid; triturate this with 120 grains of magnesium carbonate, filter, and pass through the filter sufficient of a mixture of one volume of alcohol and two of water to make the whole filtrate measure 16 fluid ounces. It forms a yellow or light brown liquid of an agreeable odor.

**Tincture, Bitter.**

Gentian, powdered, .....	
Century, powdered, of each	1 ounce
Bitter orange peel, .....	
Zedoary, of each.....	$\frac{1}{2}$ ounce
Diluted alcohol, enough to make .....	1 pint

Prepare 1 pint of tincture by maceration or percolation.

**Tincture Cajuput Compound (Life Drops).**

Oil of peppermint .....	$\frac{1}{2}$ ounce
Oil of cloves .....	$\frac{1}{2}$ ounce
Oil of cajuput .....	$\frac{1}{2}$ ounce
Oil of anise .....	$\frac{1}{2}$ dram
Alcohol, enough to make..	1 pint

Dissolve the oils in the alcohol.

**Tincture Calamus.**

Calamus, in coarse powder..	$2\frac{1}{2}$ ounces
Alcohol, enough to make..	1 pint

Prepare 1 pint of tincture by percolation or maceration.

**Tincture Calamus Compound.**

Calamus .....	$\frac{1}{2}$ ounce
Ginger .....	$\frac{1}{2}$ ounce
Coriander .....	$\frac{1}{2}$ ounce
Black pepper.....	$\frac{1}{2}$ ounce
Alcohol, enough to make..	1 pint

Reduce the drugs to a coarse powder, and prepare 1 pint of tincture by maceration (4 days).

**Tincture Carminative.**

Cardamom seeds, bruised..	600 grains
Stronger tincture of ginger..	$\frac{1}{4}$ fl. ounces
Oil of cinnamon .....	100 minims
Oil of caraway .....	100 minims
Oil of clove .....	100 minims
Rectified spirit to make..	1 pint (Imp.)

Macerate the cardamoms in 15 fluid ounces of the spirit one week, decant, express, and dissolve the oils in the mixed tinctures, making up to one pint with rectified spirit.

**Tincture Cascarilla.**

Cascarilla, powdered..... 3 ounces  
Alcohol,  
Water, each a sufficient quantity.

Mix the alcohol and water in proportion of 2 to 1, percolate the cascarrilla with this mixture until 1 pint of tincture is obtained.

**Tincture Castor.**

Castor .....1½ ounces  
Alcohol ..... 1 pint

Prepare 1 pint of tincture by maceration.

**Tincture Catechu.**

Catechu, in coarse powder 3 ounces  
Cinnamon, bruised..... 1 ounce  
Alcohol (60%), enough to  
make ..... 1 pint

Prepare 1 pint of tincture by maceration. This tincture is similar to the "tincture gambir co." of the U. S. Ph., but a good deal stronger.

**Tincture Chirata.**

Chirata, in powder.....1½ ounces  
Diluted alcohol, enough to  
make ..... 1 pint

Prepare 1 pint of tincture by maceration.

**Tincture Chloroform Compound.**

Chloroform .....1½ fl. ounces  
Alcohol ..... 6 fl. ounces  
Tincture cardamom comp. 8½ fl. ounces  
Mix.

**Tincture Chloroform and Morphine Comp.  
(Also known as Chlorodyne).**

Chloroform .....1½ fl. ounces  
Morphine hydrochloride... 72 grains  
Diluted hydrocyanic acid... 6 fl. drams  
Tincture of capsicum..... 3 fl. drams  
Oil of peppermint..... 10 drops  
Glycerin ..... 4 fl. ounces  
Alcohol, enough to make.. 1 pint

Mix the chloroform, tinctures, oil and glycerin with 8 fluid ounces of alcohol, dissolve the morphine in the mixture and add the diluted hydrocyanic acid, and enough alcohol to make 1 pint.

Dose: 5 to 15 drops.

The formulas of this preparation given by various authorities differ slightly in the amounts of chloroform and morphine.

**Tincture Coccus (Tincture of Cochineal).**

Cochineal, in powder.....1½ ounces  
Diluted alcohol, enough to  
make ..... 1 pint

Prepare 1 pint of tincture by maceration.

**Tincture Conium (Tincture of Hemlock).**

Conium, in powder..... 2 ounces  
Alcohol,  
Water, of each, a sufficient  
quantity.

Mix 2 parts of alcohol with 1 part of water and prepare 1 pint of tincture by percolation.

**Tincture Convallaria (Tincture of Lily of  
the Valley).**

Convallaria, flowers and  
stalks, in coarse powder.1½ ounces  
Diluted alcohol, enough to  
make ..... 1 pint

Prepare 1 pint of tincture by percolation.

**Tincture Coto.**

Coto bark, bruised..... 1 ounce  
Alcohol, enough to make.. 1 pint

Macerate for 8 days and filter 1 pint of tincture.

**Tincture Crocus (Tincture of Saffron).**

Saffron, Spanish..... 1 ounce  
Diluted alcohol..... 1 pint

Prepare 1 pint of tincture by maceration (5 days).

**Tincture Dewberry Compound.**

Dewberry root.....1½ ounces  
Nutmegs ..... 2 drams  
Cinnamon ..... 1 dram  
Capsicum ..... 5 grains  
Cloves ..... 25 grains  
Gum kino..... 2 drams  
Gum opium..... 30 grains  
Oil of peppermint..... 20 drops  
Diluted alcohol, enough to  
make ..... 1 pint

Reduce the drugs to a fine powder, macerate for 8 days in the diluted alcohol in which the oil has been dissolved, and filter, adding enough diluted alcohol through the filter to make 1 pint.

**Tincture Ergot Ammoniated.**

Ergot, in powder.....2½ ounces  
Ammonia water..... 1 fl. ounce  
Diluted alcohol, enough to  
make ..... 1 pint

Mix the ammonia water with the diluted alcohol, moisten the ergot with the mixture, pack in a percolator and prepare 1 pint of tincture.

**Tincture Euonymus.**

Euonymus bark, powdered 2 ounces  
Alcohol, enough to make.. 1 pint

Prepare 1 pint of tincture by maceration or percolation.

**Tincture Euphorbia.**

Euphorbia, in powder.... 2 ounces  
Diluted alcohol, enough to  
make ..... 1 pint

Prepare 1 pint of tincture by maceration or percolation.

**Tinctures by Glycerin (Glycerin Tinctures).**

Under this name a series of tinctures was prepared in England, using a mixture of 2½ volumes of acetic acid, 25 volumes of glycerin and 72½ volumes of water as a menstruum. The object was to eliminate the alcohol. The tinctures thus prepared are better made with a corresponding quantity of fluidextracts, evaporating the fluidextract until the alcohol is driven off. Nearly every vegetable tincture can be prepared in this way. The glycerin tinctures are but rarely used in America.

**Tincture Gualac Ethereal.**

Gum gualac..... 3 ounces  
Spirit of nitrous ether.... 1 pint  
Dissolve by agitation and filter.

**Tincture Hamamelis (Tincture of Witchhazel).**

Hamamelis bark..... 1 ounce  
Diluted alcohol, enough to  
make ..... 1 pint

Prepare 1 pint of tincture by percolation.

**Tincture Hebra (Hebra's Tincture).**

Wood tar,  
Soft soap,  
Alcohol, of each, equal parts.

Mix the tar and soap in a mortar and add the alcohol. Strain.

**Tincture Hempseed.**

Ground hempseed..... 4 ounces  
Alcohol, enough to make.. 1 pint

Prepare 1 pint of tincture by percolation.



**Tincture Hyoscyamus Acid.**

Hyoscyamus leaves, powdered ..... 1½ ounces  
 Diluted sulphuric acid..... 2 fl. drams  
 Diluted alcohol, enough to make ..... 1 pint  
 Macerate for five days, express and filter.

**Tincture Indian Bark.**

Tincture of cardamom comp. .... ½ fl. ounce  
 Tincture of capsicum..... 1 fl. dram  
 Tincture of rhubarb ..... ½ fl. dram  
 Tincture of myrrh ..... 20 drops  
 Spirit of nitrous ether..... 2 fl. ounces  
 Syrup orange, enough to make ..... 1 pint  
 Caramel, a sufficient quantity.

Mix and filter through talcum. Color with caramel as required.

**Tincture Indigo.**

Indigo, in coarse powder.. 1 ounce  
 Sulphuric acid..... 2½ ounces  
 Water ..... 12 fl. ounces  
 Slaked lime..... 3 ounces  
 Alcohol ..... 8 fl. ounces

Macerate the indigo in the sulphuric acid for four days, frequently stirring, add the water and slaked lime gradually with constant stirring. When cold, add 5 fluid ounces of alcohol, filter, and wash the filter with the remainder of the alcohol.

**Tincture Iodine and Chloral.**

Iodine ..... 1½ ounces  
 Chloral hydrate..... 2 ounces  
 Alcohol ..... 1 pint

Dissolve the iodine and the chloral hydrate in the alcohol.

**Tincture Iodoform Compound.**

Dissolve iodoform, 8 grams, balsam of peru, 3 grams, in alcohol, 20 grams, and add potassium iodide, 70 grams, glycerin and water, each, 35 grams.

**Tincture Iodoform Compound.**

Iodoform ..... 15 grains  
 Iodide of potassium..... 2 drams  
 Glycerin ..... 2 drams  
 Stronger alcohol..... 6 drams

Rub the iodoform of potassium and iodoform to a fine powder, add the glycerin, rub to the consistence of cream, then add the alcohol, and stir briskly until complete solution is effected.

**Tincture Iron Aromatic.**

Solution of dialysed iron.. 1 fl. ounce  
 Syrup of orange..... 5 fl. ounces  
 Alcohol ..... 3 fl. ounces  
 Tincture of vanilla..... ¼ fl. ounce  
 Water, enough to make... 1 pint

Mix the solution of dialysed iron with the alcohol and 4 ounces of water, add the syrup and tincture and enough water to make 1 pint.

**Tincture Iron Formate.**

Seventy-five grams formic acid (sp. gr. 1.18) are neutralized with 35 grams precipitated calcium carbonate, the calcium formate being held in solution by warming to 30 degrees C.; 140 grams ferric sulphate solution are mixed with 300 grams distilled water and 25 grams formic acid; add to this solution that of the calcium formate, stirring constantly; and, lastly, 500 grams alcohol; allow to stand 5-6 hours, filter and wash the precipitate with dilute alcohol until the filtrate measures one liter. The tincture contains 3 per cent. ferric formate.

**Tincture Jaborandi.**

Jaborandi leaves, in fine powder ..... 2 ounces  
 Diluted alcohol, enough to make ..... 1 pint

Prepare 1 pint of tincture by percolation.

**Tincture Jalap Compound.**

Fluidextract of jalap ..... 4 ounces  
 Fluidextract of mandrake.. 4 drams  
 Fluidextract of senna ..... 2 ounces  
 Diluted alcohol, enough to make ..... 1 pint

Mix.

**Tincture Kola.**

Kola nuts, powdered..... 3 ounces  
 Diluted alcohol, enough to make ..... 1 pint

Macerate for 8 days, filter to obtain 1 pint.

**Tincture Lobelia, acid.**

Lobelia herb..... 2 ounces  
 Capsicum ..... 2 drams  
 Vinegar ..... 1 pint

Heat the vinegar to the boiling point, pour over the drugs, macerate for 8 days, express and filter.

**Tincture Lobelia Comp.**

Lobelia,  
 Bloodroot,  
 Skunk cabbage,  
 Wild ginger,  
 Pleurisy root, of each..... ½ ounce  
 Alcohol,  
 Water, of each enough to make ..... 1 pint

Reduce the drugs to a fine powder, mix 3 parts of alcohol with one of water. Macerate for 8 days, filter, adding enough alcohol and water through the filter to obtain 1 pint.

**Tincture Lobelia, Ethereal.**

Lobelia, powdered..... 2 ounces  
 Spirit of ether, enough to make ..... 1 pint

Prepare 1 pint of tincture by percolation.

**Tincture Myrrh Compound.**

Tincture of myrrh ..... 8 fl. ounces  
 Tincture of catechu ..... 5 fl. ounces  
 Balsam of peru..... 1 dram  
 Alcohol, enough to make.. 1 pint

Mix.

**Tincture Opium Ammoniated.**

Tincture of opium..... 1½ fl. ounces  
 Benzoic acid..... 90 grains  
 Oil of anise..... 30 drops  
 Ammonia water..... 2 fl. ounces  
 Alcohol, enough to make.. 1 pint

Dissolve the oil and acid in 8 fluid ounces of alcohol, add the tincture of opium and ammonia water and enough alcohol to make 1 pint.

**Tincture Opium Camphorated.  
(Extemporaneous) (Paregoric).**

Tincture of opium..... 5 fl. drams  
 Benzoic acid..... 30 grains  
 Spirit of camphor..... 5 fl. drams  
 Oil of anise..... ½ fl. dram  
 Glycerin ..... 5 fl. drams  
 Diluted alcohol..... 15 fl. ounces

Mix and filter.

**Tincture Orris Root.**

Orris root, ground..... 4 ounces  
 Alcohol, enough to make.. 1 pint

Prepare 1 pint of tincture by percolation.

**Tincture Pellitory Compound.**

Pellitory ..... 1½ ounces  
 Camphor ..... 1 ounce  
 Opium ..... ¼ ounce  
 Oil of cloves ..... 2 fl. drams  
 Alcohol, enough to make.. 1 pint  
 Macerate for 8 days, filter 1 pint.

**Tincture Phosphorus.**

Phosphorus ..... 10 grains  
 Absolute alcohol ..... 16 ounces  
 Tincture of vanilla ..... ½ ounce  
 Oil of orange peel ..... 1 dram  
 Absolute alcohol, enough  
 make ..... 16 ounces

The phosphorus is digested with the absolute alcohol, with the exclusion of air, till dissolved; then the flavoring ingredients are added, and finally the bulk is made up with absolute alcohol to 48 fluid ounces.

**Tincture Phosphorus Compound.**

Phosphorus ..... 12 grains  
 Chloroform ..... 2½ fl. ounces  
 Absolute alcohol ..... 13½ fl. ounces  
 Dissolve the phosphorus in the chloroform and add the alcohol.

**Tincture Podophyllum.**

Podophyllum resin ..... 160 grains  
 Alcohol ..... 1 pint  
 Dissolve and filter.

**Tincture Poke Berries.**

Poke berries, bruised ..... 4 ounces  
 Diluted alcohol, enough to  
 make ..... 1 pint  
 Prepare 1 pint of tincture by maceration  
 (8 days).

**Tincture Poke Root Compound.**

Poke root, ground ..... 3 ounces  
 Cardamom, powdered ..... 1 ounce  
 Diluted alcohol, enough to  
 make ..... 1 pint  
 Prepare 1 pint of tincture by maceration  
 (8 days).

**Tincture Pulsatilla.**

Pulsatilla, powdered ..... 2 ounces  
 Alcohol, enough to make.. 1 pint  
 Prepare 1 pint of tincture by percolation.

**Tincture Quassia and Cinchona.**

Cinchona, in coarse powder ½ ounce  
 Quassia, in coarse powder ½ ounce  
 Calumba, in coarse powder ½ ounce  
 Gentian, in coarse powder ½ ounce  
 Serpentaria, in coarse powder ½ ounce  
 Chamomile, in coarse powder ½ ounce  
 French brandy ..... 2 pints  
 Macerate 14 days, and extract by displacement.

**Tincture Quassia Compound.**

Cardamom, powdered ..... ¼ ounce  
 Cochineal, powdered ..... ¼ ounce  
 Cinnamon, powdered ..... 3 drams  
 Quassia, chipped ..... ½ ounce  
 Raisins, bruised ..... 4 ounces  
 Diluted alcohol, enough to  
 make ..... 1 pint  
 Prepare 1 pint of tincture by maceration  
 (8 days).

**Tincture Quebracho.**

Quebracho bark, in powder ..... 1½ ounces  
 Diluted alcohol, enough to  
 make ..... 1 pint  
 Prepare 1 pint of tincture by percolation.

**Tincture Quinine.**

Sulphate of quinine ..... 128 grains  
 Tincture of orange peel... 1 pint  
 Dissolve the quinine in the tincture.

**Tincture Quinine Ammoniated.**

Quinine sulphate ..... 128 grains  
 Solution of ammonia ..... 1 fl. ounce  
 Diluted alcohol ..... 15 fl. ounces  
 Dissolve the quinine in the diluted alcohol and add the ammonia water. Filter. The proportions of quinine and ammonia in this formula vary slightly, as given by different authorities.

**Tincture Quinine Aromatic.**

Quinine (alkaloid) ..... 128 grains  
 Aromatic spirit of ammonia ..... 1 pint  
 Dissolve the quinine in the spirit.

**Tincture, Red Coloring.**

Alkanet root, powdered... 4 ounces  
 Alcohol, enough to make.. 16 ounces  
 Prepare 1 pint of tincture by maceration  
 (8 days).

**Tincture Red Saunders.**

Red saunders ..... 3 ounces  
 Alcohol, quantity sufficient.  
 Pack evenly and firmly in a percolator.  
 Pour on the alcohol until 16 ounces have  
 passed through.

**Tincture Rhubarb Compound.**

Rhubarb ..... 1 ounce  
 Bitter root ..... ½ ounce  
 Golden seal ..... ½ ounce  
 Gentian ..... ½ ounce  
 Prickly ash berries ..... ½ ounce  
 Sassafras ..... ½ ounce  
 Cardamom seeds ..... ¼ ounce  
 Reduce the ingredients to a fine powder,  
 moisten with diluted alcohol, pack properly  
 into a percolator and pour on diluted alcohol  
 until 16 fluid ounces of tincture have been  
 obtained.

**Tincture Rhubarb, Compound.**

Rhubarb ..... 1½ ounces  
 Gentian ..... ½ ounce  
 Serpentaria ..... 1 dram  
 Diluted alcohol, enough to  
 make ..... 1 pint  
 Reduce the drugs to a fine powder, and  
 prepare 1 pint of tincture by maceration (8  
 days) or percolation.

**Tincture Rhubarb, Compound.**

Rhubarb, powdered ..... 1 ounce  
 Cardamom, powdered ..... 1 dram  
 Coriander, powdered ..... 1 dram  
 Glycerin ..... 1 fl. ounce  
 Diluted alcohol, enough to  
 make ..... 1 pint  
 Mix the glycerin with 16 ounces of diluted  
 alcohol, macerate the drugs for 8 days and  
 filter.

**Tincture Ruscum (Hebra).**

Oil of ruscum ..... 3 fl. ounces  
 Oil of lavender ..... 1 dram  
 Oil of rosemary ..... 1 dram  
 Oil of rue ..... 1 dram  
 Ether ..... 6 fl. ounces  
 Alcohol, enough to make.. 1 pint  
 Mix.

**Tincture Saffron (American).**

American saffron ..... 2 ounces  
 Alcohol ..... 16 ounces  
 Macerate for 7 days. Express and filter  
 through paper.

**Tincture Sanguinaria Compound.**

Bloodroot .....	1 ounce
Lobelia .....	1 ounce
Skunk cabbage.....	1 ounce
Alcohol .....	1 fl. ounce
Distilled vinegar.....	1 pint

Reduce the drugs to powder and percolate, with the mixture of the alcohol and vinegar, until 1 pint of tincture is obtained.

**Tincture Senna Compound.**

Senna, powdered.....	1½ ounces
Caraway seeds, powdered..	1 dram
Raisins, bruised.....	2 ounces
Diluted alcohol, enough to make .....	1 pint

Macerate for 7 days, filter, to obtain 1 pint.

**Tincture Senna Compound.  
(Elizir Salutis).**

Senna, in coarse powder..	2 ounces
Raisins freed from seeds..	1 ounce
Caraway, bruised.....	¼ ounce
Coriander, bruised.....	¼ ounce
Diluted alcohol, enough to make .....	1 pint

Prepare 1 pint of tincture by maceration (8 days).

**Tincture Simulo.**

Simulo seeds, in fine powder .....	2 ounces
Alcohol .....	12 fl. ounces
Water .....	4 fl. ounces

Prepare 1 pint of tincture by maceration.

**Tincture Soap (Balsam Opodeldoc Liquid).**

Powdered soap.....	1 ounce
Camphor .....	½ ounce
Oil of rosemary .....	¼ ounce
Oil of thyme .....	¼ ounce
Ammonia water.....	1 ounce
Alcohol, enough to make..	1 pint

Dissolve the soap and camphor in 12 ounces of alcohol on a water bath, add the other ingredients and enough alcohol to make 1 pint.

**Tincture Soap with Turpentine.**

Powdered soap.....	1½ ounces
Oil of turpentine .....	1½ ounces
Oil of thyme .....	1 ounce
Water of ammonia.....	1 ounce
Alcohol, enough to make..	1 pint

Dissolve the soap in 10 ounces of alcohol, add the other ingredients, mix, and add enough alcohol to make 1 pint.

**Tincture Spice.**

Pimento .....	2 ounces
Cloves .....	½ ounce
Nutmeg .....	¼ ounce
Alcohol, enough to make..	1 pint

Grind the spices and prepare 1 pint of tincture by percolation or maceration.

**Tincture Stillingia.**

Stillingia root, powdered..	4 ounces
Diluted alcohol, enough to make .....	1 pint

Prepare 1 pint of tincture by percolation.

**Tincture Strychnos Malaccensis (Tincture of Hoang Nan).**

Hoang nan bark, in powder .....	4 ounces
Acetic acid.....	1 fl. ounce
Alcohol, enough to make..	16 fl. ounces

Moisten the powder with a mixture of the acetic acid and 16 ounces of alcohol, pack in a percolator and pour on the remainder of the mixture. Let stand for 24 hours, percolate, adding alcohol until 1 pint of tincture is obtained.

**Tincture Strychnos.**

Nux vomica, in powder....	1½ ounces
Diluted alcohol.....	1 pint

Prepare by maceration (8 days).

**Tincture Sumbul.**

Sumbul root, bruised.....	1½ ounces
Alcohol,	
Water, of each a sufficient quantity.	

Mix 7 parts of alcohol with 3 parts of water, macerate the sumbul in this mixture for 8 days and filter to obtain 1 pint of tincture.

**Tincture Sweet (Essentia Dulcis).  
(Gold Tropic).**

Solution of concentrated potassium acetate.....	1 fl. ounce
Spirit of acetic ether.....	6 drams
Spirit of chloric ether.....	2 fl. ounces
Caramel .....	¼ ounce
Syrup .....	2½ fl. ounces
Alcohol, enough to make..	1 pint

Mix and filter.

**Tincture Tolu Compound.**

Balsam tolu.....	1½ ounces
Balsam peru.....	6 drams
Benzoic acid.....	3 drams
Saffron .....	3 drams
Alcohol .....	1 pint

Macerate for 3 days and filter.

**Tincture Traumaticin.**

Gutta-percha tissue.....	1 ounce
Chloroform (by weight)...	10 ounces

Dissolve the gutta-percha in the chloroform.

**Tincture Wild Cherry.**

Wild cherry bark, in coarse powder.....	3 ounces
Water .....	6 fl. ounces
Alcohol, enough to make..	16 fl. ounces

Macerate the wild cherry in the water for 12 hours, add the alcohol, macerate again for 24 hours, press, filter and add enough diluted alcohol to obtain 1 pint.

**Tincture Wormwood, Alkaline.**

Wormwood,	
Tansy,	
Centaury,	
Bog bean, of each .....	1 ounce
Potassium carbonate.....	1 dram
Alcohol, enough to make..	1 pint

Powder the drugs, add the carbonate, macerate in alcohol for 6 days, filter and pass enough alcohol through the filter to obtain 1 pint.

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**PILLS.**

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**Pill Excipient.**

Powdered althaea.....	1 dram
Powdered tragacanth.....	10 grains
Simple syrup.....	2 fl. drams

Two grains of this excipient will make a good mass with 20 grains sulphate of quinia, 20 grains sulphate of cinchonidia, or 30 grains powdered asafetida; 3 grains with 30 grains dried sulphate of iron, 50 grains calomel, 50 grains subnitrate of bismuth, or 10 grains powdered digitalis; 4 grains with 30 grains Quevenne's iron; 5 grains with 45 grains pyrophosphate of iron, or 45 grains powdered capsicum.

**Pill Excipient.**

Sugar, tragacanth, acacia, white castile soap, in fine powder, of each 1 part; glycerin 16 parts; heat to make a homogeneous paste.



**Pill Excipient.**

Canada balsam mixed in the proportion of 3 parts to 1 of wax prevents the pills from becoming hard and insoluble, and has also the advantage of being well adapted for deliquescent substances, like acetate of potassium, which are well preserved thereby for an indefinite period.

**Pill Excipient.**

Rub one dram of powdered tragacanth in a mortar with two drams of alcohol, then add quickly two ounces of treacle, previously made more fluid by warming, and thoroughly mix. The composition soon sets into an adhesive mass. The only advantage this can have over the glycerite of tragacanth is that it is perhaps less hygroscopic. A good glucose syrup could be advantageously substituted for the treacle.

**Pill Excipient for Quinine.**

Use 3 drops of lactic acid to 16 grains of quinine sulphate. This makes an excellent pill mass, and the excipient is equally suitable when other ingredients than quinine form part of the pill mass.

**Pill Excipient.**

Althaea, in fine powder.... 10 parts

Acacia, in fine powder..... 1 part

Sugar, in fine powder..... 1 part

Mix. This is an excellent excipient for oily substances. It absorbs the oil well and makes a pliable pill, that will not harden.

**Pill Excipient.**

Powdered extract of licorice 1 part

Powdered licorice root.... 4 parts

This is probably the best general pill excipient known. It should be mixed with the substances and water added drop by drop.

**Pill Coating, Gelatin.**

Best French gelatin..... 1 ounce

Water ..... 4 ounces

Dissolve; then add

Acid salicylic..... 10 grains

**Pill Coating, Gelatin.**

Gelatin ..... 1 ounce

Glycerin ..... ½ ounce

Water ..... 8 ounces

Dissolve the gelatin by means of a water bath and when ready remove the apparatus a little distance from the heat. The pills are stuck on the ends of needles, dipped in this solution and rotated several times in the fingers, and finally stuck in putty to dry.

**Pill Coating, Sugar.**

Extemporaneous sugar-coating may be effected to a reasonable degree of perfection in the following manner: Mix together thoroughly equal quantities of sugar, gum and starch. Moisten the surface of the pills with an equal mixture of simple syrup and water, and then place them on the powder in a shallow dish, and give the same a centrifugal motion, so that they may be equally coated by the moisture of the syrup, which will agglutinate the particles of the powder. Dexterity attained by practice is necessary to success.

**Pill Coating, Sugar.**

A very simple method of coating pills with sugar is as follows: The dried pills, after being moistened with a little melted sugar in a saucer, are poured upon a smooth sheet of paper covered with a thin layer of powdered sugar, where they are rolled about by the perfectly clean hand until completely enveloped. The whole is then gently shaken

upon a hair sieve to remove the excess of powder, after which the pills are dried without the application of heat, which would cause their surface to crack. A single coating is quite sufficient in most cases, but the process may be repeated once or twice after the first drying. Pills coated in this way are not so beautifully smooth and glossy as those turned out by machinery, but they are very white and round, and after a little practice can be prepared off-hand, which is very convenient when only small quantities are required. They have also the advantage of being more soluble than when mixtures of starch, gum arabic, etc., are used.

**Pill Coating, Cacao Butter.**

A small quantity of cacao butter is needed in a very flat capsule, if possible one with entirely flat bottom, the pills are quickly rolled in it, then at once thrown into a sufficient quantity of powdered starch, and allowed to cool. They will be found coated with a completely isolating air-tight layer, which protects the mass from all influences of air and moisture, and prevents evaporation of volatile ingredients. The coating keeps well, is almost tasteless and possesses to a certain degree the agreeable aroma of chocolate.

**Pill Coating, Pearl.**

The pills, being fairly hard and rounded, are to be shaken in a pot or chip pill box with sandarach and ether varnish, and then thrown into very finely powdered French chalk contained in another box. Rotate for a minute and then separate from the excess of powder with the aid of a sieve. Shake in another chip box with a mixture of equal parts of beaten and strained white of egg, syrup and water, sufficient to thoroughly wet the pills; then throw them again into an excess of the powder. Shake for another minute and then remove them to a marble slab, where they are to be lightly rotated under a pill finisher, sprinkling on a little more powder, if needed, until a smooth surface is produced. If time permits, they should be dried thoroughly by exposure in an open tray.

**Pills Abernethy's.**

Blue mass..... 20 grains

Powdered jalap..... 40 grains

Syrup, enough to make a mass.

Mix. Divide into 12 pills.

**Pills Abernethy's.**

Powdered aloes..... 24 grains

Powdered ipecac..... 6 grains

Extract of henbane..... 12 grains

Blue mass..... 12 grains

Make a mass with water and divide into 12 pills.

**Pills Acid Carbohc.**

Carbohc acid..... 1 grain

Powdered elm bark..... 3 grains

Gum acacia..... 1 grain

Tragacanth paste, a sufficiency.

Make 1 pill, coat with tolu or silver leaf.

**Pills Acid Carbohc.**

Carbohc acid..... 1 grain

Excipient (althaea)..... 3 or 4 grains

Make into a mass with a drop or two of water.

**Pills Agaricin.**

Agaricin ..... 10 grains

Dover's powder..... 100 grains

Althaea, powdered,

Acacia, powdered, of each.. 50 grains

Make a mass with water and divide into 100 pills.

**Pills Aconitia (Duquesnel).**

Aconitia (Duquesnel)..... 1 grain  
 Sugar of milk..... 50 grains  
 Powdered licorice..... 50 grains  
 Extract of gentian, quantity sufficient.

Triturate the aconitine thoroughly with the sugar of milk, in a small mortar; gradually mix with it the powdered licorice root, taking great care that the mixture is rendered perfectly uniform. Then mix with it the extract and make 200 pills. Each pill contains 1-200 grain of aconitine.

**Pills Aloes and Asafetida.**

Aloes, in powder..... 1 ounce  
 Asafetida, in powder..... 1 ounce  
 Soap, in powder..... 1 ounce  
 Confection of rose..... 1 ounce

Make into a mass, and divide into pills weighing from 2 to 6 grains, as ordered.

**Pills Anæmia.**

Extract of cascara sagrada  $\frac{1}{4}$  grain  
 Bland's mass, from..... 2 to 5 grains  
 as required.

**Pills Antibilious.**

Comp. extract of colocynth 30 grains  
 Extract of henbane..... 10 grains  
 Blue pills..... 7 grains  
 Powdered ipecac..... 3 grains  
 Oil of peppermint..... 2 drops

Mix well and divide into 12 pills.

**Pills Antibilious "Little."**

Podophyllin ..... 8 grains  
 Aloin ..... 6 grains  
 Jalapin ..... 6 grains  
 Capsicin ..... 3 grains  
 Powdered ipecac..... 3 grains  
 Extract hyoscyamus..... 3 grains  
 Extract nux vomica..... 3 grains  
 Glycerite of tragacanth, enough to make a mass.

Divide into 60 pills.

**Pills Antibilious Liver.**

Podophyllin ..... 3 grains  
 Powdered asafetida..... 3 grains  
 Powdered capsicum..... 2 grains  
 Powdered extract colocynth comp. .... 24 grains  
 Oil of caraway..... 4 drops  
 Extract of hyoscyamus..... 12 grains

Make into 12 pills.

**Pills Anti-fat.**

Extract of bladder-wrack, 48 grains  
 Powdered althaea, to make a mass.

Divide into 12 pills.

**Pills Antistypitic.**

Extract of aloes..... 10 grains  
 Iron sulphate, Exsiccated, 20 grains  
 Atropia sulphate.....  $\frac{1}{16}$  grain  
 Glycerite of tragacanth to make mass.

Divide into 12 pills.

**Pills Asiatic (Tanjore Pills).**

Acid, arsenious..... 5 grains  
 Black pepper, powdered.... 10 grains  
 Acacia, powdered..... 3 grains  
 Water, enough to make a mass.

Divide into 12 pills.

**Pills Arsenicalis Compound.**

Acid, arsenious..... 5 grains  
 Powdered acacia..... 30 grains  
 Powdered cinnamon..... 3 drams  
 Extract of jalap..... 2 drams  
 Glycerin, to make a mass.

Divide into 100 pills.

**Pills Benedict.**

Aloes ..... 1 ounce  
 Senna .....  $\frac{1}{2}$  ounce  
 Asafetida .....  $\frac{1}{4}$  ounce  
 Galbanum .....  $\frac{1}{4}$  ounce  
 Myrrh .....  $\frac{1}{4}$  ounce  
 Iron sulphate..... 2 ounces  
 Oil of amber.....  $\frac{1}{4}$  ounce

Make a mass with honey, and divide into pills weighing from 3 to 6 grains, as ordered.

**Pills Cascara Compound.**

Extract of cascara sagrada 24 grains  
 Aloin ..... 2 grains  
 Strychnine sulphate.....  $\frac{1}{5}$  grain  
 Extract of belladonna.....  $\frac{1}{2}$  grains  
 Ipecac, powdered..... 1 grain

Make into a mass and divide in 12 pills.

**Pills Cathartic Vegetable.**

Compound extract of colocynth .....  $\frac{3}{4}$  grains  
 Podophyllum, resin..... 9 grains  
 Leptandrin resin..... 3 grains  
 Jalap ..... 6 grains  
 Aloes ..... 12 grains  
 Extract of hyoscyamus.... 6 grains  
 Oil of peppermint..... 5 minims

Make a mass with syrup and divide into 36 pills.

**Pills Codeine Comp.**

Codeine ..... 6 grains  
 Extract of cascara sagrada 24 grains  
 Extract of lactucarium.... 24 grains

Make a mass and divide into 12 pills.

**Pills Cough.**

Powdered gum ammoniac. 2 ounces  
 Powdered squill.....  $\frac{1}{2}$  ounces  
 Powdered soap..... 1 ounce  
 Extract of hyoscyamus....  $\frac{1}{2}$  ounce  
 Powdered ipecac..... 1 dram  
 Oil of anise..... 1 dram  
 Syrup, to make a mass.

Dispense pills weighing from 3 to 6 grains.

**Pills Colchicum.**

Powdered jalap..... 12 grains  
 Aloes ..... 12 grains  
 Calomel ..... 12 grains  
 Extract of colchicum root. 12 grains  
 Extract of nux vomica.... 3 grains

Mix, and divide into 12 pills.

**Pills Colocynth Compound.**

Colocynth, powdered..... 1 ounce  
 Aloes, powdered..... 2 ounces  
 Scammony, powdered..... 2 ounces  
 Potassium sulphate, powdered .....  $\frac{1}{4}$  ounce  
 Oil of cloves..... 2 fl. drams

Make a mass with water and dispense pills weighing from 3 to 6 grains, as ordered.

**Pills Colocynth and Henbane.**

Compound pill of colocynth ..... 2 ounces  
 Extract of henbane..... 1 ounce

Mix to form a mass.  
 Dispense pills weighing from 3 to 5 grains.

**Pills Copaiba.**

Copaiba, 10 parts; glycerin, 2 parts; mix and incorporate in the order named, powdered sugar, 10; magnesia, 10; powdered glycyrrhiza, 8.

Make a pill mass and dispense pills weighing from 4 to 8 grains.

**Pills, Female.**

Extract of belladonna.... 4 grains  
 Camphor ..... 36 grains  
 Extract of hyoscyamus.... 6 grains

Divide into 12 pills.

**Pills Creosote.**

Creosote ..... 10 parts  
 Glycerin ..... 2 parts  
 Powdered licorice extract. 10 parts  
 Powdered licorice root.... 18 parts  
 Mix, and divide to suit.

**Pills Creosote.**

Mix 1 part of creosote with 2 parts of powdered licorice root (prepared from the unpeeled root), and let the mixture stand a few minutes. Then make a mass with water, using about 3 drops for every gram of creosote.

**Pills Creosote.**

Creosote ..... 1 dram  
 Althæa powder..... 2 drams  
 or a sufficient quantity to make a mass.

Divide into 60 pills (or 30, according to the dose ordered).

**Pills Diuretic.**

Powdered squills ..... 12 grains  
 Powdered digitalis ..... 6 grains  
 Calomel ..... 3 grains  
 Powdered opium..... 3 grains  
 Syrup, enough to make a mass.  
 Divide into 12 pills.

**Pills, Emmenagogue.**

Galbanum,  
 Soap,  
 Extract of rhubarb, com-  
 pound, of each..... 24 grains  
 Mix and divide into 12 pills.

**Pills, Female.**

Iron sulphate..... 12 grains  
 Extract of nux vomica.... 1½ grains  
 Pills of aloes and myrrh.. 30 grains  
 Apol ..... 10 grains

Make into a mass with syrup and divide into 12 pills.

**Pills, Female.**

Iron sulphate exsiccated.. 12 grains  
 Extract of aloes ..... 12 grains  
 Extract of hellebore ..... 12 grains  
 Ergotin ..... 12 grains  
 Oil of savin..... 6 grains

Make a mass and divide into 12 pills.

**Pills, Female.**

Iron sulphate..... 12 grains  
 Powdered aloes..... 12 grains  
 Powdered myrrh..... 6 grains  
 Extract of chamomile..... 18 grains  
 Oil of pennyroyal..... 6 grains

Make a mass and divide into 12 pills.

**Pills, Galbanum Compound.**

Galbanum, powdered..... 1 ounce  
 Asafetida, powdered..... 1 ounce  
 Myrrh, powdered..... 1 ounce  
 Syrup, enough to make a mass.

Dispense pills weighing from 4 to 8 grains.

**Pills Gamboge Compound.**

Gamboge ..... 1 ounce  
 Aloes ..... 1 ounce  
 Powdered cinnamon ..... 1 ounce  
 Powdered soap ..... 2 ounces  
 Syrup, enough to make a mass.

Dispense pills weighing from 4 to 8 grains.

**Pills Gold Chloride Compound (Pills for Impotency).**

Gold and sodium chloride 3 grains  
 Strychnine sulphate..... 1 grain  
 Zinc phosphide..... 3 grains  
 Extract of damiana..... 60 grains  
 Make a mass and divide into 30 pills.

**Pills, Gout and Rheumatic.**

Quinine sulphate..... 10 grains  
 Powdered colchicum seed. 10 grains  
 Extract of digitalis..... 3 grains  
 Glycerite of tragacanth, enough to  
 make a mass.  
 Divide into 12 pills.

**Pills, Gout and Rheumatic.**

Extract of colocynth comp. 16 grains  
 Extract of rhubarb ..... 16 grains  
 Blue mass..... 16 grains  
 Extract of colchicum..... 6 grains  
 Make a mass and divide into 12 pills.

**Pills, Gout and Rheumatic.**

Potassium iodide..... 12 grains  
 Extract of colchicum..... 6 grains  
 Pill rhubarb comp..... 12 grains  
 Divide into 12 pills.

**Pills, Helvetian.**

Powdered alum ..... 18 grains  
 Powdered dragonsblood ... 12 grains  
 Honey, enough to make a mass.  
 Divide into 12 pills.

**Pills, Henbane Camphor and Morphine.**

Extract of henbane..... 20 grains  
 Camphor ..... 12 grains  
 Morphine sulphate..... 3 grains  
 Make a mass and divide into 12 pills.

**Pills, Imperial (King's Pills) (Kaiserpillen).**

Powdered jalap..... 10 grains  
 Powdered aloes..... 10 grains  
 Calomel ..... 5 grains  
 Powdered colocynth..... 3 grains  
 Extract of gentian, enough to make  
 a mass.  
 Divide into 12 pills.

**Pills, Indigestion.**

Extract of nux vomica.... 3 grains  
 Sodium carbonate, exsic-  
 cated ..... 24 grains  
 Extract of gentian..... 12 grains  
 Powdered ginger..... 3 grains  
 Powdered capsicum..... 3 grains  
 Mix, divide into 12 pills.

**Pills, Ipecac and Squills.**

Comp. powder of ipecac... 36 grains  
 Powdered squills..... 12 grains  
 Powdered ammoniacum... 12 grains  
 Make a mass with honey and divide in 12  
 pills.

**Pills, Janeway's.**

Resin of podophyllum.... 6 grains  
 Aloes ..... 12 grains  
 Extract of belladonna... 3 grains  
 Extract of nux vomica... 3 grains  
 Divide into 12 pills.

**Pills, Laxative, Cole.**

Comp. extract colocynth.. 36 grains  
 Calomel ..... 12 grains  
 Podophyllin ..... 1 grain  
 Divide into 12 pills.

**Pills, Laxative, Crane.**

Blue mass..... 24 grains  
 Aloes ..... 6 grains  
 Croton oil..... 1 drop  
 Mix and divide into 12 pills.

**Pills, Lead and Opium.**

Lead acetate..... 35 grains  
 Opium, in powder..... 6 grains  
 Syrup, enough to make a mass.  
 Divide into 12 pills.



**Pills, Liver.**

Calomel .....	2 grains
Euonymin .....	2 grains
Podophyllin .....	1½ grains
Powdered ipecac.....	2 grains
Extract of aloes.....	12 grains

Mix, divide in 12 pills.

**Pills, Lupulin Compound.**

Lupulin .....	8 grains
Camphor .....	4 grains
Tragacanth .....	16 grains
Glycerin, enough to make a mass.	

Divide into 12 pills.

**Pills, May Apple.**

Podophyllin .....	3 grains
Extract of henbane.....	12 grains
Powdered capsicum.....	12 grains
Powdered acacia.....	6 grains

Make into 12 pills.

**Pills Myrrh, Thompson.**

Powdered myrrh.....	24 grains
Gum acacia.....	12 grains
Sugar .....	12 grains
Water, enough to make a mass.	

Divide into 12 pills.

**Pills Nervine.**

Zinc oxide.....	12 grains
Caffeine citrate.....	12 grains
Glycerite of tragacanth, enough to make a mass.	

Divide into 12 pills.

**Pills Neuralgia.**

Quinine sulphate.....	120 grains
Morphine sulphate.....	3 grains
Strychnine .....	1 grain
Arsenious acid.....	3 grains
Extract aconite.....	30 grains

Mix. Divide into 60 pills.

**Pills Neuralgia.**

Quinine sulphate.....	12 grains
Extract of aconite.....	1 grain
Glycerite of tragacanth, enough to make a mass.	

Divide into 12 pills.

**Pills Neuralgia (Little).**

Extract gelsemium.....	3 grains
Saccharated iron carbonate	3 grains

Divide into 12 pills.

**Pills Neuralgia (Little).**

Extract gelsemium.....	3 grains
Pill galbanum comp.....	24 grains

Make into 12 pills.

**Pills Opium and Camphor.**

Powdered opium.....	12 grains
Powdered camphor.....	24 grains
Glycerite of tragacanth, enough to make a mass.	

Divide into 12 pills.

**Pills Pennyroyal and Steel.**

Iron sulphate, exsiccated.	12 grains
Powdered myrrh .....	12 grains
Powdered aloes .....	12 grains
Oil of pennyroyal.....	3 grains

Divide into 12 pills.

**Pills Phosphorus.**

Phosphorus .....	4 grains
Powdered mastic.....	30 grains
Paraffin wax.....	50 grains
Vaseline .....	66 grains
Kaolin .....	90 grains

Melt the wax and vaseline together in a porcelain capsule by the heat of a water

bath; place them in a strong glass-stoppered bottle, previously warmed by allowing it to stand in an oven or other warm place; add the phosphorus (care being taken that the mixture is not too hot, a temperature of 140 degrees F. being quite sufficient to fuse the phosphorus), and shake briskly until cold. When quite cold put carefully in a mortar with the kaolin and powdered mastic, previously well mixed until a uniform mass is obtained.

Divide into 200 pills, coat with gelatin.

**Pills Phosphorus.**

Phosphorus .....	1 grain
Carbon bisulphide.....	10 minims
Powdered soap .....	35 grains
Powdered licorice root.....	35 grains
Glycerin, enough to make a mass.	

Dissolve the phosphorus in the carbon disulphide, mix with the other ingredients and form a mass with glycerin. Divide into 50 pills, and coat with sugar or gelatin.

**Pills Black Pitch.**

Black pitch .....	42 grains
Powdered licorice .....	12 grains
Powdered ginger .....	6 grains

Melt the pitch and mix with the powders. Divide into 12 pills.

**Pills Podophyllin (Castor Oil Pills).**

Resin podophyllin.....	3 grains
Extract of hyoscyamus....	3 grains
Soap .....	4½ grains
Syrup .....	6 drops

Make 12 pills.

**Pills Potassium Permanganate.**

Inspissated ox gall,	
Powdered ammoniac,	
Paraffin .....	12 grains
White wax.....	12 grains
Fuller's earth.....	18 grains

Melt the vaseline, paraffin and wax, add the fuller's earth. Add to this the permanganate, previously powdered, mix and divide into 12 pills.

**Pills Potassium Permanganate.**

Make into a soft paste 2 grams of kaolin with 30 to 40 drops of water, and incorporate with this mixture 1 gram of finely pulverized permanganate. The pill is to be rolled in talc.

Divide into 15 pills.

**Pills Rheumatic.**

Quinine sulphate.....	12 grains
Powdered ipecac.....	6 grains

Make into 12 pills.

**Pills Rhubarb and Ox Gall.**

Inspissated ox gall,	
Powdered ammoniac,	
Powdered rhubarb, of each	12 grains

Make into 12 pills.

**Pills Silver Nitrate.**

Triturate dry 12 grains nitrate of silver with 3 grains powdered gum acacia, adding sufficient glucose to form a mass which, when finished, is perfect, of a beautiful cream white color, and of decided tenacity, and, moreover, the pills retain their shape and do not harden. Divide into 12 pills.

**Pills Soap Compound.**

Opium, in powder.....	12 grains
Soap, in powder.....	36 grains
Syrup, to make a mass.	

Divide into 12 pills.

**Pills Squills Compound.**

Squills, powdered..... 15 grains  
 Ginger, powdered..... 12 grains  
 Gum ammoniac, powdered. 12 grains  
 Soap, powdered..... 12 grains  
 Syrup, enough to make a mass.

Divide into 12 pills.

**Pills Sulphur.**

Potassium sulphide..... 8 grains  
 Powdered jalap ..... 8 grains  
 Powdered soap ..... 8 grains  
 Extract of dandelion, to make a mass.

Divide into 12 pills.

**Pills Tar and Iodoform.**

Iodoform ..... 24 grains  
 Tar ..... 16 grains  
 Extract of opium..... 1 grain

Mix and make a mass with extract of gentian. Divide into 12 pills.

**Pill Tonic.**

Powdered ipecac..... 6 grains  
 Iron sulphate, exsiccated. 24 grains  
 Extract of chamomile, enough to make a mass.

Divide into 12 pills.

**Pills Tonic, Aitken's.**

Arsenious acid..... 1 grain  
 Strychnine ..... 1 grain  
 Iron, in powder..... 36 grains  
 Quinine sulphate..... 50 grains  
 Extract of gentian, enough to make a mass.

Divide into 50 pills.

Half the strength is obtained by dividing the mass in 100 pills.

**Pills Tonic Digestive.**

Powdered ipecac..... 3 grains  
 Extract of nux vomica... 3 grains  
 Extract of aloes ..... 12 grains  
 Powdered rhubarb..... 12 grains  
 Powdered soap..... 6 grains  
 Oleoresin of ginger..... 6 grains

Make 12 pills.

**Pills Tonic, Liver.**

Blue mass..... 18 grains  
 Aloin ..... 3 grains  
 Oleoresin of ginger..... 3 grains  
 Extract of jalap..... 3 grains

Make into 12 pills.

**Pills Triplex.**

Aloes ..... 24 grains  
 Blue mass..... 12 grains  
 Podophyllin ..... 3 grains

Make into 12 pills.

**Pills Triplex.**

Aloes ..... 24 grains  
 Blue mass..... 24 grains  
 Powdered scammony..... 12 grains  
 Oil of caraway..... 4 drops

Make into 12 pills.

**SOLUTIONS.****Solution Acid Chromic.**

Chromic anhydride..... 4 ounces  
 Distilled water..... 12 ounces

Dissolve.

**Solution Aluminium Chloride.**

Aluminium sulphate..... 4 ounces  
 Barium chloride..... 4 ounces  
 Water, sufficient quantity.

Dissolve the two salts, each in 8 ounces of warm water, mix the solutions, and heat the mixture on a water bath to about 160 degrees F. Then allow to cool, filter, and pass enough water through the filter to make 1 pint of product.

**Solution Ammonium Citrate.**

Ammonium carbonate..... 1½ ounces  
 Citric acid..... 2½ ounces  
 Distilled water, enough to make ..... 1 pint

Dissolve the citric acid in 10 ounces of water, add the ammonium carbonate gradually and finally enough water to make 1 pint.

**Solution Ammonium Sulphide.**

Place 1 part powdered ammonium chloride in a retort connected with a good condenser, add a solution consisting of 2 parts crystallized sodium sulphide and 5 parts boiling water, and distill off about one-half of the liquid in the retort. A very concentrated and trustworthy reagent is represented by this distillate.

**Solution Ammonia Valerianate.**

Distilled water..... 14 fl. ounces  
 Valerianic acid..... ½ ounce  
 Alcoholic extract of valerian ..... 3 drams  
 Ammonium carbonate q. s. to neutralize, about.... 4 to 5 drams

The acid is mixed with 10 fl. ounces water, and the ammonium carbonate added at once in small pieces. When effervescence is no longer discernible, test with litmus paper, and if neutral, filter quickly through paper. If the reaction is acid, add more carbonate of ammonia. Dissolve the extract of valerian in the remainder of the water, mix the two solutions, filter, and, if necessary, add distilled water to make 1 pint.

**Solution Coal Tar, Simple (Liquor Anthracis Simplex).**

Coal tar..... 3 ounces  
 Benzol ..... 6 ounces  
 Alcohol ..... 6 ounces  
 Mix and warm to about 100 degrees F. for 20 minutes, then add  
 Potassium sulphide..... 1½ ounces  
 Soda solution (15%)..... 1½ ounces  
 Alcohol ..... 6 ounces  
 Heat again for 20 minutes and set aside for a week, then decant the clear liquid.

**Solution Coal Tar Compound (Liquor Anthracis Comp.).**

Resorcin ..... 3 ounces  
 Salicylic acid..... 5 drams  
 To be added to the simple solution of coal tar (see preceding formula).

**Solution Bismuth.**

Bismuth subnitrate..... 1¼ ounces  
 Citric acid..... 1 ounce  
 Nitric acid..... 1 ounce  
 Potassium bicarbonate..... 1¾ ounces  
 Solution of ammonia, and distilled water, of each a sufficient quantity.

Dissolve the bismuth salt in the nitric acid by heat, add the citric acid dissolved in 1 ounce of hot water. Add the bicarbonate, dissolved in 2 ounces of water, stirring well. Dilute with hot water to 1 pint, cool, collect the precipitate on a filter and wash free from nitrate. Pour upon the filter a mixture of 1

ounce of ammonia water and 3 ounces of water, returning the filtrate until the precipitate is dissolved. Make up to 1 pint.

#### Solution of Atropine Sulphate.

Atropine sulphate..... $4\frac{1}{2}$  grains  
Salicylic acid..... $\frac{1}{2}$  grain  
Distilled water..... 1 fl. ounce

Dissolve the atropine and salicylic acid in the water, recently boiled and cooled.

#### Solution Bismuth Compound.

Spirit of chloroform..... 2 fl. ounces  
Tincture of nux vomica... 1 fl. ounce  
Diluted hydrocyanic acid. 2 fl. drams  
Tincture of cardamom comp. .... 2 fl. ounces  
Morphine hydrochloride... 2 grains  
Solution of bismuth (precipitating formula), enough to make..... 1 pint

Mix and filter.

#### Solution Bismuth Compound and Pepsin.

Pepsin in scales..... 2 drams  
Solution of bismuth comp. 1 pint

Dissolve and filter.

#### Solution Bromide Compound.

Chloral hydrate..... 3 ounces  
Potassium bromide..... 3 ounces  
Extract of henbane..... 15 grains  
Extract of Indian hemp... 15 grains  
Extract of licorice..... 2 drams  
Oil of orange peel..... 1 drop  
Distilled water, enough to make ..... 1 pint

Mix and dissolve, allow to settle and filter.

#### Solution of Chlorinated Lime.

Chlorinated lime..... 2 ounces  
Distilled water..... 1 pint

Mix, put in a stoppered bottle, set aside for 24 hours, shaking occasionally, strain.

#### Solution Saccharated Lime.

Calcium hydroxide..... 1 ounce  
Refined sugar..... 2 ounces  
Distilled water..... 20 ounces

Dissolve the sugar in the water, add the lime, set aside in a dark bottle for 24 hours, shaking occasionally, and carefully decant 1 pint.

#### Solution Calcium Chlorophosphate.

Calcium phosphate precipitated ..... 2 troy ounces  
Hydrochloric acid.  
Water of ammonia.  
Water.

To the phosphate of calcium add a pint of water and enough hydrochloric acid to dissolve it; filter, add enough water of ammonia to precipitate the gelatinous phosphate; wash to remove the ammonium chloride, put the mass into a suitable vessel, with a little water, and 2 fluid ounces hydrochloric acid. When dissolved, make up to 24 fluid ounces and filter.

#### Solution of Calumba.

Calumba root..... 8 ounces  
Alcohol ..... 2 fl. ounces  
Water, enough to make.... 1 pint

Macerate the calumba with 1 pint of water for 24 hours, express and macerate again with 1 pint of water; express again. Mix the two infusions, heat to nearly the boiling point; when cold add the alcohol, set aside, and filter, adding enough water to obtain 1 pint.

#### Solution of Caoutchouc (Solution of India Rubber).

India rubber..... 1 ounce  
Benzol ..... 10 fl. ounces  
Carbon disulphide..... 10 fl. ounces

Mix the liquids, put in a well stoppered bottle, add the india rubber cut in small pieces, set aside in a cool place, shaking occasionally, until dissolved.

#### Solution Caulophyllum and Pulsatilla.

Caulophyllum root..... 8 ounces  
Pulsatilla ..... 8 ounces

Alcohol,  
Water, of each, enough to make ..... 1 pint

Mix 8 ounces of alcohol and 8 ounces of water, macerate the drugs in coarse powder in the mixture, put in a well stoppered bottle with the same mixture of alcohol and water, until 12 ounces are obtained. Continue the percolation with 2 pints of water, evaporate the second percolate to 4 ounces, mix with the reserved portion, set aside and filter.

#### Solution Chirata.

Chirata, in powder..... 8 ounces  
Alcohol,  
Water, of each, enough to make ..... 1 pint

Percolate the chirata until 1 pint is obtained, with a mixture of 1 part of alcohol and 4 parts of water.

#### Solution Copaiba, Soluble.

Copaiba ..... 8 fl. ounces  
Solution of potash ..... 12 fl. ounces  
Water ..... 4 fl. ounces

Boil copaiba and potash for an hour, add the water and mix. Set aside till cold, draw off the clear liquid, evaporate to 15 fluid ounces and add 1 ounce of solution of potash.

#### Solution of Copaiba and Buchu.

Fluidextract of buchu.... 2 fl. ounces  
Solution of copaiba..... 14 fl. ounces  
Mix.

#### Solution Copaiba, Buchu and Cubeb.

Fluidextract of buchu .... $1\frac{1}{2}$  fl. ounces  
Fluidextract of cubeb .... $1\frac{1}{2}$  fl. ounces  
Solution of copaiba..... 13 fl. ounces  
Mix.

#### Solution Copaiba, Buchu, Cubeb and Matico.

Fluidextract of matico.... $1\frac{1}{2}$  fl. ounces  
Fluidextract of cubeb .... $1\frac{1}{2}$  fl. ounces  
Fluidextract of buchu .... $1\frac{1}{2}$  fl. ounces  
Solution of copaiba..... $11\frac{1}{2}$  fl. ounces  
Mix.

#### Solution Copaiba, Buchu, Cubeb, Matico and Santal.

Oil of santal..... 1 fl. ounce  
Alcohol ..... 1 fl. ounce  
Solution of copaiba, buchu, cubeb and matico..... 14 fl. ounces  
Mix.

#### Solution of Saffron.

Saffron (Spanish)..... 1 ounce  
Glycerin ..... 5 fl. ounces  
Alcohol ..... 11 fl. ounces

Exhaust the saffron with a mixture of the glycerin and alcohol.

#### Solution Cusparia.

Cusparia, powdered..... 8 ounces  
Alcohol,  
Water, of each, enough to make ..... 1 pint

Prepare 1 pint of solution by percolation with a mixture of 1 part of alcohol and 4 parts of water.



**Solution Dover's (Liquor Doveri).**

Morphine acetate.....	96 grains
Diluted acetic acid.....	1 ounce
Wine of ipecac.....	3 fl. ounces
Diluted alcohol, enough to make .....	1 pint

Dissolve the acetate in the acid, add the other ingredients and after 24 hours, filter.

**Solution for Easton's Syrup.**

Soluble iron phosphate....	3 ounces
Strychnine .....	15 grains
Quinine phosphate.....	6 drams
Hypophosphorous acid....	1 dram
Water, enough to make....	1 pint

Dissolve the iron in 6 fluid ounces of water; mix the acid with 4 fluid ounces of water and dissolve in it the strychnine and quinine. Mix the two solutions and add enough water to make 1 pint. Filter. One part of this solution to 3 parts of syrup makes Easton's Syrup.

**Solution Epispastic (Blistering Solution).**

Cantharides, powdered....	8 ounces
Acetic ether, enough to obtain .....	1 pint

Moisten the cantharides with 4 ounces of ether, put in a percolator with a cover, and continue the percolation till 1 pint is obtained.

**Solution Euonymin.**

Euonymin .....	32 grains
Oil of coriander.....	4 drops
Alcohol .....	1 fl. ounce

Dissolve and filter.

**Solution Euonymin, Soluble.**

Extract of euonymin.....	6 drams
Solution of potassa.....	2 ounces
Warm water .....	10 fl. ounces
Alcohol .....	4 fl. ounces

Dissolve the extract in a mixture of the water and potassa, add the alcohol, set aside for three days and filter.

**Solution Euonymus and Bismuth.**

Solution of euonymus, soluble .....	2 fl. ounces
Compound solution of bismuth .....	14 fl. ounces

Mix, filter after 24 hours.

**Solution Euonymus, Bismuth Comp. and Pepsin.**

Solution of euonymus, soluble .....	2 fl. ounces
Solution of bismuth comp. and pepsin .....	14 fl. ounces

Mix and filter after 24 hours.

**Solution Euonymus and Cascara.**

Solution of euonymus, soluble .....	4 fl. ounces
Elixir of cascara sagrada, aromatic .....	12 fl. ounces

Mix.

**Solution Euonymus and Pepsin.**

Solution of euonymus, soluble .....	2 fl. ounces
Elixir of pepsin.....	14 fl. ounces

Mix and filter after 24 hours.

**Solution of Gutta-percha.**

Gutta-percha .....	1½ ounces
Chloroform, enough to make .....	1 pint
Lead carbonate.....	1½ ounces

Dissolve the gutta-percha in 10 ounces of chloroform. Mix the lead with the remainder of the chloroform and add to the first solution. Agitate occasionally for several days,

until clear. Decant the clear liquid and add enough chloroform to make 1 pint.

**Solution Hamamelis (Solution of Witchhazel).**

Fresh witchhazel leaves...	1 pound
Water .....	30 fl. ounces
Alcohol .....	3 fl. ounces

Macerate in a still for 24 hours, then distill off 1 pint.

**Solution Hypophosphites Compound.**

Calcium hypophosphite....	256 grains
Sodium hypophosphite....	256 grains
Magnesium hypophosphite.	128 grains
Solution of iron hypo-	
phosphite .....	5 fl. ounces..

Mix and add distilled water to make 1 pint.

**Solution Iodine Carbulated (Boulton's Solution).**

Tincture of iodine comp....	120 minims
Carbolic acid.....	40 minims
Glycerin .....	2½ fl. ounces
Distilled water, enough to make .....	1 pint

Mix, expose to sunlight until colorless.

**Solution Iodine (Weak).**

Iodine .....	400 grains
Potassium iodide.....	480 grains
Distilled water, enough to make .....	1 pint

Dissolve the iodide in the water, and add the iodine.

**Solution Iodine (Strong).**

Iodine .....	2 ounces
Potassium iodide.....	1¼ ounces
Distilled water.....	2 fl. ounces
Alcohol, enough to make..	1 pint

Dissolve the iodide in the water, add the iodine and enough alcohol to make 1 pint.

**Solution Iodine with Glycerin.**

Iodine .....	128 grains
Potassium iodide.....	384 grains
Water .....	1 fl. ounce
Glycerin, enough to make 1 pint	

Dissolve the iodide and iodine in the water, add glycerin to make 1 pint. Shake well.

**Solution Iron Albuminate.**

Dried egg albumen.....	½ ounce
Cinnamon water.....	5 fl. ounces
Solution of oxychloride of iron (Pharm. Ger.)....	2 fl. ounces
Solution of soda (Pharm. Ger.) .....	1 fl. dram
Alcohol .....	2 fl. ounces
Distilled water, enough to make .....	1 pint

Dissolve the egg albumen in the cinnamon water, which contains about 10 per cent. of alcohol. Dilute the iron solution with 6 fluid ounces of distilled water and add the alcohol. Mix the two solutions. After several hours filter the liquid through a pellet of cotton, and then pass enough water through the latter to make the product 1 pint.

Fresh egg albumen may, of course, be used. In this case, five times as much must be taken as of dry. With fresh albumen the solution is clearer.

**Solution Iron Albuminate.**

Dry albumen, ½ ounce, is dissolved in 1 pint of lukewarm water, strained, and poured into a mixture of 2 fluid ounces of solution of ferric chloride, and 1 pint of lukewarm water. It may be necessary to add very dilute soda solution to accurate neutralization in order to insure the precipitation of

the ferric albuminate. The precipitate is washed by decantation with lukewarm water, collected on a moistened cloth, and when completely drained, transferred to a porcelain vessel, and dissolved by stirring in a mixture of 1 fluid dram of soda solution and 2 fluid ounces of water. To this solution 4 fluid ounces of cinnamon water, 2 fluid ounces of alcohol are added, and then sufficient water to make 1 pint of fluid. So prepared, solution of albuminate of iron is a clear or only slightly turbid, red-brown fluid, having barely an alkaline reaction and a faint chalybeate taste, that of cinnamon being decided, and it contains 4 parts of iron in 1,000 parts. By chloride of sodium, as well as by hydrochloric acid, precipitates are produced. It is not rendered turbid by ammonia, nor does alcohol produce precipitation. When diluted with water (1-20) this solution is not blued by ferricyanide of potassium nor darkened by tannic acid.

#### Solution Iron Albuminate.

Dialyzed iron.....	12 fl. drams
White of eggs.....	12 fl. drams
Cinnamon water.....	30 drams
Alcohol .....	30 drams
Hydrochloric acid.....	15 drops
Water, enough to make...	16 ounces

The white of 1 egg is diluted with the cinnamon water and filtered. The iron, previously diluted with 6 ounces of water containing the hydrochloric acid, is added to the filtered liquid, and the two are shaken together. Add the alcohol, and lastly add enough water to make 16 ounces.

#### Solution Iron Albuminate Phosphorated.

The white of 1 egg (which should be fresh) is dissolved in 1 pint of distilled water, the solution mixed with 2½ drams of ethereal tincture of chloride of iron, decolorized by light, and finally with 4 drops of a 1 per cent solution of phosphorus in ether. If the preparation is not needed immediately, it should be allowed to stand for 24 hours and then filtered.

#### Solution Iron Citrate.

Iron and ammonium citrate .....	640 grains
Alcohol .....	1½ fl. ounces
Water, enough to make....	1 pint

Dissolve the citrate in 12 fluid ounces of water, add the alcohol and enough water to make 1 pint.

#### Solution Iron and Quinine Citrate.

Citrate of iron and ammonium .....	640 grains
Quinine .....	128 grains
Citric acid.....	288 grains
Alcohol .....	2 fl. ounces
Water, enough to make....	1 pint

Dissolve the citrate in 12 fluid ounces of water, heat, add the citric acid; when dissolved add the quinine. Dissolve, add the alcohol and enough water to make 1 pint.

#### Solution Iron Iodide.

Sugar, 40 grams; iodine, 5 grams; iron reduced by hydrogen, 8 grams; distilled water, 40 grams; pure glycerin, 110 grams. Mix the iodine, water and sugar in a porcelain mortar, adding the iron by degrees. Heat gently in a capsule, stirring with a glass rod, and filter to separate the excess of iron; then add the glycerin. The mixture should weigh 150 grams. The syrup is made by adding 6 grams of this to 100 of syrup.

#### Solution Iron Peptonated.

Dried egg albumen.....	1¼ drams
Pepsin, pure.....	½ dram
Solution of oxychloride of iron (Germ. Pharm.)....	2 fl. ounces
Syrup .....	½ fl. ounce
Brandy .....	1½ fl. ounces
Distilled water.....	1 pint

Dissolve the egg albumen in 3 fluid ounces of distilled water, add the pepsin and digest during 4 hours at 40 degrees C. (104 degrees F.). On the other hand, mix the iron solution with the syrup and 8 fluid ounces of distilled water, mix this liquid with the solution of the peptonized albumen, and heat the whole in a steam bath, to 90-96° C. Then allow it to cool, add the brandy, and finally, enough water to make 1 pint. Let the mixture stand during eight days; then pour off the clear solution from the sediment.

#### Solution Iron Peptonate.

Solution of dialyzed iron. 2 fl. ounces	
Distilled water .....	1 pint
Mix	
Pure dry peptone.....	½ ounce
Distilled water .....	1 pint

Dissolve and add the iron solution to it. Neutralize with solution of soda, filter, and wash the precipitate till free from chloride. Transfer to a dish, add 10 fluid ounces of water and promote solution by addition of 3 to 5 drops of hydrochloric acid. Then add alcohol 1½ fluid ounces and enough water to make 1 pint. Filter.

#### Solution Iron Salicylate (Braithwaite).

Iron sulphate.....	128 grains
Sodium salicylate.....	128 grains
Glycerin .....	2 fl. ounces
Water, enough to make...	1 pint

Dissolve the sulphate of iron and salicylate of sodium, each, in ½ of the water, and mix the solutions; then add the glycerin.

#### Solution Iron Salicylate.

Iron sulphate, pure.....	256 grains
Sodium salicylate.....	256 grains
Sodium acetate.....	512 grains
Water .....	16 fl. ounces
Mix and dissolve.	

#### Solution Krameria.

Krameria, powdered.....	8 ounces
Alcohol,	
Water, of each, enough to make .....	1 pint

Prepare 1 pint of solution by percolation with a mixture of 1 part of alcohol and 4 parts of water.

#### Solution Magnesium Bromide.

Diluted hydrobromic acid. 4 fl. ounces	
Carbonate of magnesia, a sufficient quantity.	
Water, a sufficient quantity.	

Add the acid with 10 fluid ounces of water, add the magnesia gradually, till effervescence ceases, then add enough water to make 1 pint, and filter.

#### Solution Magnesium Sulphate. (Henry's Solution).

Magnesium sulphate.....	8 ounces
Diluted sulphuric acid....	2 fl. ounces
Water, enough to make...	1 pint
Dissolve and filter.	

#### Solution of Pepsin and Euonymus.

Tincture of euonymus....	2 fl. ounces
Solution of pepsin.....	14 fl. ounces
Mix and filter.	

**Solution Morphine Acetate.**

Morphine acetate.....17½ grains  
 Diluted acetic acid.....38 minims  
 Alcohol ..... 1 fl. ounce  
 Distilled water, enough to  
 make ..... 4 ounces  
 Mix the alcohol and acid and 2 fluid ounces  
 of water, dissolve the acetate and add water  
 to make 4 fluid ounces.

**Solution of Morphine Hydrochloride.**

Morphine hydrochloride..17½ grains  
 Diluted hydrochloric acid. 38 minims  
 Alcohol ..... 1 fl. ounce  
 Distilled water, enough to  
 make ..... 4 fl. ounces  
 Proceed as in the preceding.

**Solution Pepsin.**

Pepsin ..... 3 ounces  
 Dilute hydrochloric acid..2½ drams  
 Glycerin ..... 2 fl. ounces  
 Alcohol ..... 1 fl. ounce  
 Chloroform water..... 3 fl. ounces  
 Distilled water, enough to  
 make ..... 1 pint  
 Dissolve the pepsin in 8 fluid ounces of  
 water, to which the diluted acid has been  
 added. Add the other ingredients, let stand  
 24 hours, filter, and add enough water to  
 make 1 pint.

**Solution Picis Carbonis (Solution Coal Tar).**

Coal tar, pure..... 3 ounces  
 Soap tree bark, in coarse  
 powder ..... 2 ounces  
 Alcohol,  
 Water, of each, enough to  
 make ..... 1 pint  
 Moisten the soap bark with a mixture of  
 one part of alcohol and 4 parts of water and  
 percolate 14 fluid ounces, to which add the  
 coal tar. Digest for 2 days, occasionally  
 stirring, and decant the clear liquid.

**Solution Potassium Permanganate.**

Potassium permanganate..1¼ drams  
 Distilled water, enough to  
 make ..... 1 pint  
 Dissolve the salt in the water.

**Solution Quassia.**

Quassia wood, in powder.. 2 ounces  
 Alcohol,  
 Water, of each, enough to  
 make ..... 1 pint  
 Prepare 1 pint by percolation, with a mix-  
 ture of 1 part of alcohol and 4 parts of water.

**Solution Quinine, Tasteless.**

Quinine sulphate..... 64 grains  
 Dilute sulphuric acid..... 1 fl. dram  
 Saturated solution of  
 saccharin ..... 1 fl. ounce  
 Essence of peppermint.... ½ fl. ounce  
 Distilled water, enough to  
 make ..... 1 pint  
 Dissolve the quinine in 2 ounces of water  
 to which the acid has been added, add the  
 other ingredients, let stand 2 days, filter.

**Solution Quinine and Ammonia (Bostick).**

Quinine sulphate.....128 grains  
 Alcohol, 49 per cent..... 14 fl. ounces  
 Ammonia water..... 2 fl. ounces  
 Mix and shake till dissolved.

**Solution Rhubarb.**

Rhubarb, in coarse powder 8 ounces  
 Alcohol,  
 Water, of each, a sufficient quantity.  
 Prepare one pint by percolation with 1 part  
 of alcohol and 4 parts of water.

**Solution Quinine and Ammonia (Squire).**

Quinine sulphate.....128 grains  
 Stronger water of am-  
 monia ..... ½ fl. ounce  
 Alcohol, 49 per cent..... 1 pint  
 sufficient to make..... 1 pint  
 Mix and dissolve by agitation.

**Solution Rhubarb, Sweet.**

Rhubarb, in coarse powder 5 ounces  
 Alcohol ..... 6 fl. ounces  
 Glycerin ..... 1 fl. ounce  
 Sugar ..... 5 ounces  
 Water, a sufficient quantity.  
 Mix the alcohol and glycerin with 20 ounces  
 of water, and percolate the rhubarb, till 12  
 ounces of percolate are obtained. Dissolve  
 the sugar in the percolate and add enough  
 of the menstruum to make 1 pint.

**Solution of Roses, Sweet.**

Carmine .....100 grains  
 Otto of rose..... 25 drops  
 Alcohol ..... 1 fl. ounce  
 Ammonia water..... 1 fl. ounce  
 Glycerin ..... 8 fl. ounces  
 Water, enough to make.. 1 pint  
 Dissolve the carmine in the ammonia water  
 by heat, and the otto of roses in the alcohol.  
 Mix and add the glycerin, then add enough  
 water to make 1 pint; let stand 2 days and  
 filter.

**Solution Saccharin.**

Saccharin (soluble)..... 1 ounce  
 Spirit of peppermint..... ½ fl. ounce  
 Diluted alcohol, enough to  
 make ..... 1 pint  
 Mix and dissolve. Filter.

**Solution Saccharin, Aromatic.**

Saccharin ..... 1 ounce  
 Vanillin ..... 2 drams  
 Oil of cinnamon..... 2 drams  
 Alcohol, enough to make.. 1 pint  
 Mix and filter.

**Solution Santal Compound.**

Oil of santal ..... 1 fl. ounce  
 Oil of cubeb ..... ½ fl. ounce  
 Copaiba ..... 3 drams  
 Oil of pimento..... 15 drops  
 Oil of cassia ..... 15 drops  
 Tincture of buchu..... 3 fl. ounces  
 Alcohol ..... 4 fl. ounces  
 Solution of potassa..... 3 fl. ounces  
 Magnesium carbonate.... ½ ounce  
 Water, enough to make... 1 pint  
 Mix the potash solution with the copaiba  
 and oils. Add 4 ounces water, shake well,  
 and in ½ hour add the tincture and alcohol.  
 Add the magnesia. Shake well and let stand  
 for 24 hours, then filter and add enough  
 water to make 1 pint.

**Solution Senega.**

Senega, in coarse powder. 8 ounces  
 Alcohol and water, of each a suffi-  
 cient quantity.  
 Mix 1 part of alcohol with 3 parts of water  
 and prepare 1 pint of solution by percolation.

**Solution Sodium Chloride (Normal Salt Solution).**

Sodium chloride, pure.... 11 grains  
 Distilled water, sterilized,  
 enough to make..... 4 fl. ounces  
 Make a solution.

**Solution Sodium Ethylate.**

Sodium, clean and bright. 22 grains  
 Absolute alcohol..... 1 fl. ounce  
 Cautiously dissolve the sodium in the al-  
 cohol contained in a flask surrounded by a  
 stream of cold water.



**Solution Strontium Iodide.**

Strontium iodide..... 1 ounce  
 Distilled water, enough to  
 make ..... 1 pint

Dissolve.

**Solution Strychnine Hydrochloride.**

Strychnine hydrochloride..... 1½ grains  
 Alcohol ..... 1 fl. ounce  
 Distilled water..... 3 fl. ounces

Mix and dissolve.

**Solution Tar (Liquor Picis Carbonis).**

Prepared tar, 4 ounces; tincture of quillaia,  
 1 pint. Digest at a temperature of 120° F.  
 for a few days; allow to become cold, and  
 decant or filter.

**Solution Thymol.**

Thymol ..... 15 grains  
 Alcohol ..... ½ fl. ounce  
 Glycerin ..... ½ fl. ounce  
 Water, enough to make... 1 pint

Dissolve the thymol in the alcohol, add the  
 glycerin and 14 ounces of water. Filter  
 through talcum and add enough water to  
 make 1 pint.

**Solution Thymol Compound.**

Thymol ..... 20 grains  
 Benzoic acid..... 1 dram  
 Eucalyptol ..... 5 drops  
 Oil of wintergreen..... 4 drops  
 Menthol ..... 10 grains  
 Boric acid..... 1 dram  
 Alcohol ..... 3 ounces  
 Water, enough to make... 1 pint

Dissolve the first 6 ingredients in the al-  
 cohol, add 12 ounces of water slowly, filter  
 through talc and add enough water to make  
 1 pint.

**Solution Tolu, Soluble.**

Balsam tolu..... 2½ ounces  
 Alcohol ..... 2½ fl. ounces  
 Kaolin ..... 2 ounces  
 Magnesia ..... 1 dram  
 Water, enough to make... 1 pint

Dissolve the tolu in the alcohol with a  
 gentle heat, then pour the solution on the  
 mixed powders in a large warm mortar,  
 gradually work in the water, previously  
 warmed, let cool and filter.

**Solution Trinitrin (Solution Nitroglycerin).  
(Spirit of Nitroglycerin).**

Trinitroglycerin ..... 17½ grains  
 Absolute alcohol, enough  
 to make..... 1 pint

Dissolve the nitroglycerin in the alcohol.

**Solution Zingiber, Soluble (Solution of  
Ginger).**

Tincture of ginger..... 4 fl. ounces  
 Purified talc..... 3 ounces  
 Granulated sugar..... 3 ounces  
 Water, enough to make... 1 pint

Mix the sugar and talc in a spacious  
 mortar, add the tincture, mix well, and  
 gradually work in 12 ounces of water. Let  
 stand 6 hours, filter, and add enough water  
 through the filter to make 1 pint.

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**WATERS.**

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**Aromatic Waters, by Filtration.**

General Formula: Rub the aromatic oil  
 with calcium phosphate, talcum, kieselguhr or  
 magnesium carbonate in a mortar, add the

water with continuous stirring and filter.  
 This is the process now official in the U.  
 S. P., for most of the aromatic waters puri-  
 fied talc being used as a filtering medium.  
 The general relation of oil and water is 1  
 or 2 in 1000. In the absence of specific di-  
 rections, this formula may always be used.

**Aromatic Water, by Distillation.**

Aromatic plants, flowers, leaves, etc., are  
 distilled with water, to which a small per-  
 centage of alcohol is sometimes added. A  
 few of the aromatic waters of the U. S. P.  
 are made in this way, as Aqua Rosæ fortior  
 and Aqua Aurantii Florum.

**Aromatic Waters, by Solution.**

Aromatic oils are added to hot water in the  
 proportion of 1 to 1000 and dissolved by  
 shaking.

**Aromatic Waters (from Essences).**

A convenient way of preparing aromatic  
 waters consists in first making the essences  
 and then mixing them with water. A filter-  
 ing medium, like talc will greatly aid in  
 clarifying the resulting waters. The follow-  
 ing are some formulas for essences that may  
 be used for this purpose:

**Essence for Anise Water.**

Oil of anise..... 1 part  
 Alcohol (90 per cent by  
 vol.) ..... 9 parts

**Essence for Orange Water.**

Oil of bitter orange..... 1 part  
 Alcohol (90 per cent)..... 20 parts

**Essence for Orange Flower Water.**

Oil of orange flowers..... 1 part  
 Alcohol (90 per cent)..... 50 parts

**Essence for Camphor Water.**

Camphor ..... 4 parts  
 Alcohol (90 per cent)..... 6 parts

**Essence for Caraway Water.**

Oil of caraway..... 1 part  
 Alcohol (90 per cent)..... 20 parts

**Essence for Lemon Water.**

Oil of lemon..... 1 part  
 Alcohol (90 per cent)..... 9 parts

**Essence for Creosote Water.**

Creosote ..... 3 parts  
 Alcohol (90 per cent)..... 7 parts

**Essence for Lavender Water.**

Oil of lavender..... 1 part  
 Alcohol (90 per cent)..... 9 parts

**Essence for Rosemary Water.**

Oil of rosemary..... 1 part  
 Alcohol (90 per cent)..... 9 parts

**Essence for Cinnamon Water.**

Oil of cinnamon..... 1 part  
 Alcohol ..... 6 parts

**Essence for Peppermint Water.**

Oil of peppermint..... 1 part  
 Alcohol ..... 9 parts

**Essence for Spearmint Water.**

Oil of spearmint..... 1 part  
 Alcohol ..... 9 parts

**Essence for Rose Water.**

Oil of rose ..... 1 part  
 Alcohol ..... 50 parts

**Waters Aromatic, To Preserve.**

Make a small opening 1-32 of an inch in the cork to admit atmospheric air. They will never become moldy or lose their aroma. A pledget of cotton, used in place of a cork will also tend to keep the waters sweet.

**Aqua Carminativa (Gripe Water).**

Potassium bicarbonate.... 2 drams  
Syrup ..... 4 fl. ounces  
Caraway water..... 4 fl. ounces  
Dill water, enough to  
make ..... 1 pint  
Dissolve the bicarbonate in the caraway  
water and add the other ingredients.

**Aqua Carminativa (Gripe Water).**

Oil of chamomile ..... 3 drops  
Oil of caraway ..... 4 drops  
Oil of coriander ..... 4 drops  
Oil of lemon ..... 3 drops  
Oil of peppermint ..... 5 drops  
Alcohol ..... 1½ fl. ounces  
Glycerin ..... 2 fl. ounces  
Water, enough to make... 16 fl. ounces  
Dissolve the oils in the alcohol, add the  
glycerin and 12 ounces of water, filter through  
talc and add enough water to make 1 pint.

**Aqua Carminativa (Gripe Water).**

Sodium bicarbonate..... ½ ounce  
Aromatic spirit of ammonia 80 drops  
Anise water, enough to  
make ..... 1 pint  
Dissolve and mix, filter through talc.

**Water Cherry Laurel, Artificial.**

Oil of bitter almonds.... 30 drops  
Alcohol ..... 1 fl. ounce  
Distilled water, enough to  
make ..... 1 pint  
Dissolve the oil in the alcohol, add the  
water, filter through talc.

**Water Chlorine.**

Potassium chlorate..... 10 grains  
Hydrochloric acid..... 60 minims  
Water ..... 16 ounces  
Place the powdered chlorate potassium in  
a dry 16-ounce bottle, and pour in the acid,  
then let stand a few minutes, agitating oc-  
casionaly, and pour in 2 ounces of the  
water and shake, then add 2 ounces more  
of the water, and shake again. Finally add  
the balance of the water, and preserve in a  
proper manner.

**Water Lime.**

Place slaked lime on a filter while still  
hot, and pass sufficient water through it.  
The product is sufficiently strong, but con-  
tains those impurities against which the  
official process aims to protect.

**Water Menthol.**

Menthol ..... 6 grains  
Alcohol ..... 1 dram  
Distilled water..... 1 pint  
Dissolve the menthol in the alcohol, add to  
the water, add ½ ounce talc, shake and filter.

**Water, Opium.**

The distillate from a mixture of 1 part of  
gum opium and 5 parts of water.

**Water Orange Flower (Without Distilling).**

Take 3 or 4 drops of a fine quality of oil  
of neroli petals and drop on a small piece  
of filter paper, say 3 inches square. Put  
the paper into a quart bottle, pour on 4  
fluid ounces of warm distilled water at about  
100° F. and shake well for a couple of min-

utes. Then add warm distilled water up to  
a pint and shake the whole from time to  
time till cold. Lastly, filter. For flavoring  
purposes the addition of 2 drams of good dis-  
tilled rose water to each pint of the above  
is said to improve it.

**Water Tar (Ger. Pharm.).**

Tar ..... 1 part  
Pumice stone, in fine pow-  
der ..... 3 parts  
The pumice stone should be washed and  
dried and mixed with the tar. Then to  
make the tar water  
Take of the above mixture 4 parts  
Water ..... 10 parts  
Shake together five minutes, and filter. It  
should be freshly made when desired for  
use.

**Water Tar, Substitute.**

This preparation is largely used in Italy  
in place of tar water.  
Green pine cones, 6 kilos; olibanum, 80  
grams; tolu balsam, 50 grams; Burgundy  
pitch, 40 grams; juniper berries, 600 grams.  
The mixture is macerated over night in suf-  
ficient water. Afterwards 12 kilos of distillate  
are obtained by the aid of a slow fire. The  
liquid is filtered and bottled.

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**OINTMENTS.**

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**Ointment Acid Carbolic Compound (Compound Phenol Ointment).**

Citrine ointment..... 4 drams  
Sulphur, sublimed..... 1 dram  
Phenol ..... 2 drams  
Olive oil..... 2 drams  
Yellow wax..... 2 ounces

Melt the olive oil and wax together, stir  
in the sulphur and phenol and add the  
citrine ointment.

**Ointment Acid Carbolic Compound.**

Zinc oxide..... 1 dram  
Calamine ..... 20 grains  
Phenol ..... 10 grains  
Citrine ointment..... 1 dram  
Benzoinated lard, enough  
to make..... 1 ounce

Mix.

**Ointment Acid Pyrogallic.**

Pyrogallic acid..... 1 dram  
Lard ..... 7 drams

Mix.

**Ointment Acid Pyrogallic Comp.**

Pyrogallic acid..... 25 grains  
Salicylic acid..... 10 grains  
Ichthyol ..... 25 grains  
Vaseline, enough to make 1 ounce

Mix.

**Ointment Acid Salicylic with Creosote.**

Acid salicylic..... 1 dram  
Creosote ..... 2 drams  
Simple ointment..... 5 drams

Mix.

**Ointment Acre.**

Lard ..... 5,000 parts  
Venice turpentine..... 1,200 parts  
Resin ..... 600 parts  
Yellow wax..... 300 parts  
Powdered euphorbium... 200 parts  
Cantharidin ..... 5 parts

**Ointment Aeruginis (Copper Ointment).**

Copper subacetate.....	1 dram
Lard .....	7 drams

**Ointment Anti-Neuralgia.**

Chloral hydrate.....	1 dram
Menthol .....	1 dram
Cacao butter.....	4 drams
Spermaceti .....	2 drams

Melt the cacao butter and spermaceti together, and dissolve the chloral hydrate and menthol in the mixture.

**Ointment Alkaline.**

Sodium carbonate.....	1 dram
Slaked lime.....	30 grains
Opium, powdered.....	1 grain
Petrolatum, enough to make .....	1 ounce

**Ointment Alum Compound.**

Burnt alum.....	16 grains
Ichthyol .....	16 grains
Oil of thyme.....	8 minims
Zinc oxide.....	90 grains
Petrolatum, enough to make .....	1 ounce

Mix.

**Ointment Antiperiodic.**

Quinine sulphate .....	90 grains
Iron carbonate, saccharated .....	60 grains
Oil of cajuput.....	30 drops
Petrolatum, enough to make .....	1 ounce

**Ointment Antiphelidicum (Freckle Ointment).**

Ammoniated mercury.....	1 dram
Bismuth subnitrate.....	1 dram
Glycerin ointment.....	6 drams

Mix.

**Ointment Atropine.**

Atropine .....	10 grains
Oleic acid.....	40 grains
Lard, enough to make.....	1 ounce

Rub the atropine with the oleic acid, gently warm the mixture and add the lard.

**Ointment Aromatic.**

Oil of laurel .....	½ dram
Oil of juniper, .....	
Oil of peppermint, .....	
Oil of lavender, .....	
Oil of rosemary, of each..	3 drops
Ointment .....	1 ounce

**Ointment Astringent.**

Alum .....	½ dram
Catechu, in fine powder..	½ drams
Ointment, enough to make .....	1 ounce

**Ointment Astringent.**

Catechu, in fine powder..	90 grains
Sperm ointment, enough to make .....	1 ounce

**Ointment Balsam Peru.**

Balsam peru .....	1 dram
Lard .....	7 drams

Mix.

**Ointment Balsam Peru.**

Balsam peru .....	1 dram
White wax.....	1 dram
Lard .....	6 drams
Oil of rosemary.....	10 drops

Melt wax and lard together, add the balsam and oil and stir till cool.

**Ointment Benzoin.**

Powdered benzoin.....	2 drams
Lard .....	6 drams

Mix.

**Ointment Basilicon.**

Olive oil.....	9 drams
Yellow wax.....	3 parts
Resin .....	3 parts
Mutton tallow.....	3 parts
Turpentine (gum).....	2 parts

Melt the solid substances and add the oils, stir till cool.

**Ointment Benzoin Comp.**

Powdered benzoin.....	1½ drams
Yellow wax.....	1½ drams
Lard .....	5 drams

Melt wax and lard, and digest the benzoin in the warm mixture for ½ hour. Strain.

**Ointment Bismuth Oleate.**

Bismuth oxide.....	40 grains
Oleic acid.....	40 grains
White wax.....	1 dram
Vaseline .....	6 drams

Mix the bismuth and the acid, heat gently till dissolved, add to the vaseline and wax previously melted together.

**Ointment Boric Compound.**

Boric acid.....	1½ drams
White wax.....	1½ drams
Oil of sweet almonds.....	3 drams
Vaseline .....	2 drams

Melt wax, oil and vaseline together and incorporate the boric acid.

**Ointment Boroglyceride.**

Boroglyceride .....	30 parts
Glycerin .....	20 parts
White wax.....	10 parts
Petrolatum .....	60 parts

Melt the boroglyceride with the glycerin, and add the wax, previously melted, with the petrolatum; stir until cold.

**Ointment Cade (Hebra's Itch Ointment).**

Oil of cade.....	1½ drams
Sulphur, sublimed.....	1½ drams
Prepared chalk.....	½ dram
Soft soap.....	3 drams
Lard .....	1½ drams

Mix the lard with the soap and oil, then rub the mixed powders with the mixture.

**Ointment Caffeo-Iodoform.**

Iodoform .....	30 grains
Cumarin .....	5 grains
Powdered coffee.....	30 grains
Lanolin .....	4 drams
Benzoinated lard.....	4 drams

Mix. The coffee must be ground to as fine a powder as possible, along with the cumarin and iodoform, and be sifted through fine muslin.

**Ointment Cantharidin.**

Cantharidin .....	1 grain
Ointment .....	1 ounce

Mix.

**Ointment Capsicum.**

Capsicum, powdered.....	120 grains
Spermaceti .....	1 dram
Olive oil.....	7 drams

Melt the spermaceti and oil and digest the capsicum in the warm mixture for two hours. Strain.

**Ointment Chrysarobin Compound.**

Chrysarobin .....	40 grains
Salicylic acid.....	15 grains
Ichthyol .....	40 grains
Vaseline, enough to make .....	1 ounce

Mix.

**Ointment Cocaine.**

Cocaine .....	20 grains
Oleic acid.....	80 grains
Lard .....	400 grains

Mix the cocaine and acid and heat gently till dissolved, then mix with the lard.



**Ointment Conium.**

Juice of conium..... 2 ounces  
 Anhydrous wool fat.....  $\frac{3}{4}$  ounce  
 Evaporate the conium juice to  $\frac{1}{2}$  ounce and  
 by trituration incorporate the wool fat.

**Ointment Creolin.**

Creolin .....  $\frac{1}{2}$  dram  
 Ammoniated mercury..... 10 grains  
 Soft soap.....  $2\frac{1}{2}$  drams  
 Vaseline ..... 5 drams  
 Mix the vaseline and soap and add the  
 creolin; then incorporate the ammoniated  
 mercury.

**Ointment Creosote.**

Creosote ..... 1 dram  
 Paraffin ointment..... 7 drams  
 Mix.

**Ointment Creosote Compound.**

Creosote ..... 6 drops  
 Lead carbonate..... 20 grains  
 Red oxide mercury..... 10 grains  
 Palm oil .....  $\frac{1}{2}$  ounce  
 Lard .....  $\frac{1}{2}$  ounce  
 Melt together the lard and oil and add the  
 creosote; then incorporate the mixed powders.

**Ointment, Date's.**

Ammoniated mercury..... 10 grains  
 Armenian bole..... 8 grains  
 Oil of origanum..... 5 drops  
 Carbolic acid..... 1 drop  
 Benzoated lard, enough to  
 make ..... 1 ounce  
 Incorporate the mixed powders with the  
 lard, add the oil and acid. Mix well.

**Ointment, Deshler's.**

Resin .....  $1\frac{1}{2}$  ounces  
 Beeswax .....  $1\frac{1}{2}$  ounces  
 Turpentine ..... 6 drams  
 Soft paraffin..... 2 ounces  
 Mix by gentle heat, allow to stand for a  
 few minutes, pour off the clear liquid and  
 let cool.

**Ointment Diachylon, Improved.**

One part of freshly precipitated (from  
 acetate of lead) pure white hydrated oxide  
 of lead is rubbed with 2 parts of water and  
 mixed well with 6 parts of the best Lucca  
 olive oil. It should be stirred for about 2  
 hours over a hot water bath near the boil-  
 ing point, and cooled with constant stirring  
 until the proper consistency is obtained.  
 While cooling, a dram of oil of lavender to  
 the half pound of ointment is added. This  
 ointment contains a definite quantity of oxide  
 of lead, has a neutral reaction, can be kept  
 in a good condition for some time, and con-  
 stitutes a smooth, whitish, elegant preparation.

**Ointment Diachylon, Hebra's Improved.**

Dissolve 200 grams of lead acetate in 1  
 liter of distilled water, and 300 grams white  
 Castile soap in  $1\frac{1}{2}$  liters of warm distilled  
 water. Filter both solutions and mix them.  
 The precipitate is washed with water, then  
 freed from moisture as much as possible by  
 kneading, and 1 part of it is melted with  $1\frac{1}{2}$   
 parts of olive oil (best) on the water bath.  
 The mixture is afterwards triturated in a  
 mortar until it forms a hne, white salve.

**Ointment Eczema.**

Zinc oxide..... 10 grains  
 Calomel ..... 10 grains  
 Lead acetate..... 10 grains  
 Liq. Carbonis detergens... 30 grains  
 Vaseline, enough to make. 1 ounce  
 Mix well.

**Ointment Egg.**

Yolk of 1 egg  
 Oil of almonds.....  $1\frac{1}{2}$  ounces  
 Beeswax .....  $\frac{1}{2}$  ounce  
 Balsam peru.....  $\frac{1}{2}$  dram  
 Melt the oil and the wax, add the other  
 ingredients and stir till cool.

**Ointment Egyptian.**

Burnt alum..... 10 grains  
 Verdigris ..... 90 grains  
 Vinegar ..... 2 drams  
 Honey, enough to make.. 1 ounce  
 Mix them well together.

**Ointment Ether Ozonic.**

Ozonic ether (B. P. C.)... 1 dram  
 Benzoic acid..... 5 grains  
 Otto of rose..... 1 drop  
 Lard, enough to make.... 1 ounce  
 Mix well.

**Ointment Eucalyptus.**

Oil of eucalyptus..... 1 dram  
 Hard paraffin..... 4 drams  
 Soft paraffin..... 5 drams  
 Melt the paraffins together and add the  
 oil. Stir until cool.

**Ointment Galls Compound.**

Powdered galls..... 1 dram  
 Oil of laurel ..... 10 drops  
 Oil of nutmeg ..... 10 drops  
 Oil of rosemary ..... 25 drops  
 Ointment, enough to make 1 ounce  
 Mix well.

**Ointment Galls and Opium.**

Gall ointment..... 925 grains  
 Opium, in fine powder.... 75 grains

**Ointment Glycerin, Permanent.**

Gelatin ..... 1 gram  
 Glycerin ..... 96 grams  
 Starch ..... 144 grams  
 Water ..... 100 grams  
 Dissolve the gelatin and starch in the mix-  
 ture of the glycerin and water.

**Ointment, Golden.**

Yellow oxide mercury.... 1 dram  
 White wax..... 2 drams  
 Lard ..... 5 drams  
 Mix the wax and lard and incorporate the  
 mercury.

**Ointment Healing.**

White wax.....  $1\frac{1}{2}$  drams  
 Olive oil.....  $\frac{1}{4}$  dram  
 Tincture of calendula....  $\frac{1}{4}$  dram  
 Carbolic acid..... 10 grains  
 Vaseline, enough to make 1 ounce  
 Melt together and stir till cool.

**Ointment Ichthyl.**

Ichthyl ..... 1 dram  
 Water ..... 1 dram  
 Benzoated lard..... 3 drams  
 Anhydrous lanolin..... 5 drams  
 Mix well.

**Ointment Ichthyl, Salicylated.**

Salicylic acid..... 30 grains  
 Ichthyl ointment..... 1 ounce  
 Mix well.

**Ointment Iodine Compound.**

A great number of formulas for this oint-  
 ment are in use. They contain iodine, potas-  
 sium iodide and lard, but in varying propor-  
 tions. The following are the best known:

**Ointment Iodine Compound.**

Iodine .....	15 grains
Potassium iodide.....	30 grains
Water .....	30 minims
Lard .....	.480 grains

**Ointment Iodine Compound.**

Potassium iodide.....	24 grains
Iodine .....	12 grains
Lard .....	2 ounces

**Ointment Iodine Compound.**

Potassium iodide.....	2 drams
Iodine .....	18 grains
Lard .....	2 ounces

**Ointment Iodine Compound.**

Potassium iodide.....	2½ drams
Iodine .....	24 grains
Lard .....	2 ounces

**Ointment Ichthyol Comp.**

Ichthyol .....	½ dram
Lime water.....	2 drams
Anhydrous wool fat.....	2½ drams
Soft paraffin.....	2½ drams
Zinc ointment.....	1 dram

Rub the ichthyol with the lime water, add the wool fat gradually, mixing well, then the other ingredients.

**Ointment Juniper Tar.**

Lard .....	1½ drams
Suet .....	1½ drams
Beeswax .....	1 dram
Oil of juniper tar.....	4 drams
Oil of lavender .....	20 drops

Melt together the lard, suet and wax, then add the oils and stir till cool.

**Ointment Krameria Compound.**

Burgundy pitch.....	8 parts
Venice turpentine.....	2 parts
White wax.....	1 part
Extract of krameria.....	2 parts
Alum .....	1 part

Melt the first three ingredients over a gentle fire, and add the krameria extract and alum in fine powder, and incorporate well.

**Ointment Labdanum.**

Labdanum .....	2 drams
Balsam peru.....	1 dram
Oil of mace .....	20 drops
Oil of wormwood .....	5 drops
Petrolatum, enough to make .....	1 ounce

Mix them.

**Ointment Lanolin.**

To be used as a cold cream.

Anhydrous lanolin.....	10 parts
Benzoated lard.....	20 parts
Rose water.....	30 parts

**Ointment Lanolin.**

Imitation of Goulard's Cerate.

Anhydrous lanolin.....	10 parts
Benzoated lard.....	20 parts
Solution lead subacetate..	30 parts

**Ointment Lanolin.**

For burns.

Anhydrous lanolin.....	10 parts
Benzoated lard.....	20 parts
Lime water .....	30 parts

**Ointment Lanolin.**

Refrigerant zinc ointment.

Anhydrous lanolin.....	10 parts
Benzoated zinc ointment..	20 parts
Rose water.....	30 parts

**Ointment Lead (Bleisalbe).**

Solution of lead acetate...	1 dram
Anhydrous lanolin.....	1 part
Paraffin ointment.....	8 parts

Rub the solution with the lanolin, then incorporate the ointment.

**Ointment Lead Acetate.**

Lead acetate, in fine powder .....	20 grains
White ointment.....	.480 grains
Mix well.	

**Ointment Lead Carbonate.**

Lead carbonate.....	1 dram
White paraffin ointment..	9 drams
Mix.	

**Ointment Lead Iodide.**

Lead iodide.....	1 dram
Yellow ointment.....	9 drams
Mix.	

**Ointment Lead Tannate.**

Tannic acid.....	½ dram
Solution of lead subacetate	1 dram
Lard .....	8½ drams
Mix them well together.	

**Ointment Mercurial, Rapid Preparation.**

Place 100 grams of mercury in a mortar, and mix with it a small quantity of lard, and add drop by drop 10 drops oxygenated water, stirring until complete extinction, and finally work in by fractions the balance of the lard up to 100 grams. (Oxygenated water is not peroxide of hydrogen, but simply water to which oxygen has been added under pressure.) The ointment, if well made, will answer all requirements, and prove very satisfactory.

**Ointment Mercurial, Rapid.**

Rub 6 pounds of mercury, 6 ounces of glycerin, 1 ounce water and 1 ounce gum arabic, in a mortar until the mercury globules have disappeared; then add the other ingredients as usual. The process requires about 2 hours.

**Ointment Mercurial Preparation.**

Mix 2 ounces of old mercurial ointment and 2 ounces of suet together. Add to the mixture 12 ounces of mercury in 3 separate portions, and triturate rapidly after each addition till the globules disappear, aiding the extinguishment of the mercury by adding during each trituration 15 drops of ether. Then add a melted and strained mixture of 4 ounces of suet and 6 ounces of lard, and triturate this mixture until cool.

**Ointment Mercury.**

Place the mercury in a porcelain mortar, warm to expel all moisture, and add for every 100 parts of mercury 1 part of metallic potassium in pieces. A gentle action results, and the mass should be stirred so that thorough amalgamation may take place. Then transfer to the dish containing the fats and stir briskly. In an instant the mercury is finely separated, while 10 minutes will suffice for complete incorporation. This extinction takes place as readily and as rapidly with large as with small quantities. The process is recommended for the rapid preparation of an always fresh ointment.

**Ointment Mercury, Compound.**

Mercury ointment.....	3 drams
Yellow beeswax.....	2 drams
Olive oil.....	2 drams
Camphor .....	1 dram

Mix the wax and olive oil with the aid of a gentle heat, add the mercury ointment and finally incorporate the camphor.

**Ointment Mercury Oleate.**

Mercuric oleate..... 2 drams  
Benzoated lard..... 6 drams  
Mix well.

**Ointment Mercury and Potassium Iodide.**

Red iodide of mercury.... 7 grains  
Iodide of potassium..... 40 grains  
Lard ..... 1 ounce  
Mix.

**Ointment Mercury Nitrate, Modified.**

Mercury ..... 1½ drams  
Nitric acid..... 2 drams  
Lard ..... ½ ounce  
Neat's foot oil..... 12½ drams  
Powdered camphor..... ½ dram  
Melt the fats together at a heat not exceeding 170° F., dissolve the camphor in the hot fats, add the mercury previously dissolved in the nitric acid, and stir the mixture while cooling.

**Ointment Mercury, Lead and Zinc (Ungt. Metallorum).**

Ointment of lead acetate.. 1 ounce  
Ointment of mercury  
nitrate ..... 1 ounce  
Ointment of zinc oxide... 1 ounce  
Mix them.

**Ointment Mucilaginous.**

Vaseline ..... 1 ounce  
Zinc oxide..... 1 dram  
Powdered gum tragacanth. ½ dram  
Distilled water..... 2½ drams  
Tincture of benzoin..... 30 drops  
Soap powder..... 6 grains  
Mix the oxide of zinc and vaseline in a mortar and add a little of the mucilage prepared in another; then add the soap powder, and finally the tincture. Mix carefully and preserve in a tight box.

**Ointment Naphthol.**

Naphthol ..... 45 grains  
Prepared chalk..... 30 grains  
Soft soap..... 2½ drams  
Lard ..... 5 drams  
Mix the naphthol and chalk with the lard, then incorporate the soap.

**Ointment Naphthalin Compound.**

Naphthalin ..... 40 grains  
Benzoic acid..... 20 grains  
Boric acid..... 20 grains  
Balsam of peru..... 20 grains  
Tincture of benzoin..... 40 grains  
Vaseline ..... 3 drams  
Yellow wax..... 3 drams  
Melt the vaseline and wax, add the mixed powders, then the balsam of peru and finally the tincture.

**Ointment Nerve (Ointment Rosemary Comp.).**

Lard ..... 4 drams  
Suet ..... 2 drams  
Yellow wax..... ½ dram  
Oil of mace ..... ½ dram  
Oil of juniper ..... ¼ dram  
Oil of rosemary ..... ¼ dram  
Melt together the yellow wax, lard and suet, then add the oils.

**Ointment Neuralgia.**

Chloroform ..... 1 dram  
Lanolin ..... 7 drams  
Mix well.

**Ointment Nipple.**

Tannin ..... 15 grains  
Bismuth subnitrate..... ½ dram  
Vaseline ..... 7½ drams  
Mix well.

**Ointment Opium.**

Extract of opium..... 1 dram  
Distilled water..... ½ dram  
Glycerin ..... ½ dram  
Ointment ..... 1 ounce

Mix the extract, water and glycerin together, add the ointment and mix well.

**Ointment Paraffin.**

Hard paraffin..... 3 drams  
Soft paraffin..... 7 drams  
Melt and stir till cold.

**Ointment Potassium Iodide.**

Potassium iodide..... 48 grains  
Powdered soap..... 5 grains  
Distilled water..... 45 grains  
Petrolatum, enough to make ..... 1 ounce

Dissolve the iodide and soap in the water and mix with the petrolatum.

**Ointment Potassium Iodide.**

Spermaceti ..... ½ ounce  
Olive oil..... 6 drams  
White wax..... 2 drams  
Potassium iodide..... 4 scruples  
Oil of lemon ..... 3 drops  
Oil of rose ..... 3 drops  
Mix. This ointment does not change color by keeping.

**Ointments Potassium Iodide and Opium.**

Potassium iodide..... 3 drams  
Lard ..... 3 drams  
Laudanum ..... 2 fl. drams  
Mix the iodide and the lard and incorporate the laudanum.

**Ointment Red.**

Vermilion ..... 15 grains  
Sulphur sublimed ..... 3 drams  
Oil of bergamot..... 8 drops  
Petrolatum ..... 5 drams  
Mix.

**Ointment Resorcin Comp.**

Resorcin ..... 40 grains  
Ichthyol ..... 40 grains  
Salicylic acid..... 15 grains  
Ointment, enough to make 1 ounce  
Mix.

**Ointment, Simple.**

Best olive oil (Lucca).... 3 ounces  
White wax sufficient to make a soft ointment.  
One ounce of wax to three of oil is the average quantity required; in winter less, in summer more to be used.

**Ointment, Simple.**

Best sweet oil of almonds 7 ounces  
Spermaceti ..... 2 ounces  
White wax..... ½ to 1 ounce  
The simple ointments made with olive oil or oil of sweet almonds are not as liable to become rancid as those made with lard.

**Ointment Stavesacre.**

Oil of stavesacre ..... 1 dram  
Oil of rose geranium..... 2 drops  
Hard paraffin ..... ½ dram  
Soft paraffin ..... 6½ drams  
Melt the paraffins together and add the oils.

**Ointment Sulphur Comp.**

Sulphur, sublimed..... 1½ drams  
Chalk ..... 1 dram  
Oil of cade..... 1½ drams  
Soft soap..... 3 drams  
Lard ..... 3 drams  
Mix.



**Ointment Sulphur and Mercury.**

Sulphur, sublimed..... 25 grains  
 Ammoniated mercury..... 5 grains  
 Creosote ..... 4 drops  
 Olive oil..... 1 dram  
 Lard ..... 7 drams  
 Rub the powders with the oil, add the creosote and incorporate the lard.

**Ointment Sulphur and Potassium.**

Sulphur, precipitated..... 2 drams  
 Potassium carbonate..... 1 dram  
 Red sulphate of mercury.. 2 grains  
 Water ..... 1 dram  
 Oil of bergamot..... 2 drops  
 Lard, enough to make..... 1 ounce  
 Rub the first four ingredients, incorporate the lard, and add the oil of bergamot.

**Ointment Tar Comp.**

Oil of tar ..... 20 grains  
 Tincture of benzoin..... 10 grains  
 Zinc oxide..... 15 grains  
 Yellow wax..... 2 drams  
 Lard ..... 3 drams  
 Cotton seed oil..... 3 drams  
 Melt the wax, lard and oils, add tincture of benzoin, and heat gently to drive off the alcohol; finally incorporate the zinc oxide thoroughly.

**Ointment Tartar Emetic.**

Tartar emetic..... 2 drams  
 Paraffin ointment..... 8 drams  
 Mix well.

**Ointment Thymol.**

Thymol ..... 1 dram  
 Lard ..... 7 drams  
 Melt together in a water bath and stir till cool.

**Ointment Turpentine.**

Turpentine (gum thus).... 1 ounce  
 Yellow wax..... 1 ounce  
 Oil of turpentine..... 1 ounce  
 Melt the solids and incorporate the oil while cooling.

**Ointment Witchhazel.**

Extract witchhazel liquid. 2 drams  
 Anhydrous wool fat..... 4 drams  
 Lard ..... 2 drams  
 Mix the extract with the wool fat and add the lard.

**Ointment Zinc Oxide.**

Triturate 5 ounces of oxide of zinc with 4 ounces of glycerin until a smooth paste is obtained. Then melt 1 ounce of white wax, add gradually 15 ounces of benzoinated lard, keeping the temperature near 140° F.; now stir until the mixture begins to thicken, add the zinc oxide prepared as before, and continue the stirring until thoroughly mixed and perfectly smooth.

## BOUGIES, SUPPOSITORIES, GELATINS, ETC.

**Bougies Gelatin.**

Best French gelatin..... 3 ounces  
 Water ..... 9 ounces  
 Glycerin ..... 6 ounces

Put the gelatin in the water and let it stand twelve hours, or over night. Then add the glycerin and put on a water bath; evaporate to twelve ounces. When needed for use, the necessary amount should be warmed until soft, the medicinal ingredients added, then pour into molds or roll out on a pill tile.

This combination forms the gelatin basis directed in the various formulas for nasal suppositories given below.

**Bougies Iodoform with Glycerin.**

Ninety-two and five-tenths parts of iodoform triturated with alcohol are rubbed up, in a warm mortar, with a solution of 5 parts of gum arabic, 2.5 parts glycerin, and 2.5 parts of water, until a plastic mass results. This is formed into bougies, which are rolled out between two boards; each bougie is 10 centimeters long and contains about 3.5 grams. If the mass is too friable a little water may be added. The bougies are afterward placed in a warm situation for a couple of hours, when they will be ready for use. They contain now:

Iodoform ..... 92.5 parts  
 Glycerin ..... 2.5 parts  
 Gum arabic..... 5 parts

To avoid their flattening during the drying, by their own weight, they should be supported along both sides by a small roll of wax paper.

**Bougies Nasal, Acid Carbollic.**

Carbolic acid..... ½ grain  
 Gelatin basis (Bougies gelatin) ..... 30 to 40 grains

**Bougies, Nasal, Bismuth Subnitrate.**

Bismuth subnitrate..... 5 grains  
 Gelatin basis ("Bougies Gelatin") or cacao butter ..... 30 to 40 grains

**Bougies, Nasal, Cocaine.**

Cocaine hydrochloride. 1/6 to ¼ grain  
 Gelatin basis or cacao butter ..... 30 to 40 grains

**Bougies, Nasal, Copper Sulphate.**

Copper sulphate..... 1/16 grain  
 Gelatin basis or cacao butter ..... 30 to 40 grains

**Bougies, Nasal, Iodoform.**

Iodoform ..... ½ grain  
 Gelatin basis or cacao butter ..... 30 to 40 grains

**Bougies, Nasal, Lead Acetate.**

Lead acetate..... ¼ grain  
 Gelatin basis or cacao butter ..... 30 to 40 grains

**Bougies, Nasal, Morphine.**

Morphine acetate ..... ¼ grain  
 Gelatin basis or cacao butter ..... 30 to 40 grains

**Bougies, Nasal, Oil Pine.**

Oil pinus sylvestris..... ½ drop  
 Gelatin basis or cacao butter ..... 30 to 40 grains

**Bougies, Nasal, Thymol.**

Thymol ..... 1/16 to ¼ grain  
 Gelatin basis or cacao butter ..... 30 to 40 grains

**Bougies, Nasal, Thymol Comp.**

Thymol ..... 1/16 grain  
 Eucalyptol ..... 1/16 grain  
 Menthol ..... 1/32 grain  
 Gelatin basis or cacao butter ..... 30 to 40 grains

**Bougies, Nasal, Zinc.**

Zinc sulphate..... 1/10 to ½ grain  
 Gelatin basis or cacao butter ..... 30 to 40 grains

**Bougies, Urethral, Acid Gallic.**  
Gallic acid..... 1 grain  
Gelatin basis or cacao  
butter ..... 40 grains  
Roll out into a pencil.

**Bougies, Urethral, Acid Tannic.**  
Tannic acid ..... 1 grain  
Gelatin basis or cacao  
butter ..... 40 grains

**Bougies Urethral, Bismuth.**  
Bismuth subnitrate.... 5 to 10 grains  
Gelatin basis or cacao  
butter ..... 40 grains

**Bougies, Urethral, Cocaine.**  
Cocaine hydrochloride.... ½ grain  
Gelatin basis or cacao  
butter ..... 40 grains

**Bougies, Urethral, Copper Sulphate.**  
Copper sulphate..... 1 grain  
Gelatin basis or cacao  
butter ..... 40 grains

**Bougies Urethral, Extract Belladonna.**  
Extract belladonna.... ¼ to 1 grain  
Gelatin basis or cacao  
butter ..... 40 grains

**Bougies Urethral, Extract of Opium.**  
Extract opium..... 1 to 2 grains  
Gelatin basis or cacao  
butter ..... 40 grains

**Bougies Urethral, Iodoform.**  
Iodoform ..... 5 grains  
Gelatin basis or cacao  
butter ..... 40 grains

**Bougies Urethral, Iodoform Comp.**  
Iodoform ..... 5 grains  
Oil of eucalyptus..... 5 drops  
Gelatin basis or cacao  
butter ..... 40 grains

**Bougies, Urethral, Iron.**  
Iron perchloride..... ½ to 1 grain  
Gelatin basis or cacao  
butter ..... 40 grains

**Bougies, Urethral, Lead.**  
Lead acetate..... ½ to 1 grain  
Gelatin basis or cacao  
butter ..... 40 grains

**Bougies, Urethral, Morphine.**  
Morphine hydrochloride.... 1 grain  
Gelatin basis or cacao  
butter ..... 40 grains

**Bougies, Urethral, Eucalyptus.**  
Oil of eucalyptus..... 5 to 10 drops  
Gelatin basis or cacao  
butter ..... 40 grains

**Bougies, Urethral, Salol.**  
Salol ..... 10 grains  
Gelatin basis or cacao  
butter ..... 40 grains

**Bougies Urethral, Silver Nitrate.**  
Silver nitrate..... ¼ to 1 grain  
Gelatin basis or cacao  
butter ..... 40 grains

**Bougies, Urethral, Zinc Chloride.**  
Zinc chloride..... ¼ to ½ grain  
Gelatin basis or cacao  
butter ..... 40 grains

**Bougies, Urethral, Zinc Sulphate.**  
Zinc sulphate..... ½ to 1 grain  
Gelatin basis or cacao  
butter ..... 40 grains

**Bougies, Urethral, Zinc Sulphocarbolate.**  
Zinc sulphocarbolate... ¼ to 1 grain  
Gelatin basis or cacao  
butter ..... 40 grains

**Gelatum Acid Acetic (Unna).**  
Gelatin ..... 1 ounce  
Distilled water..... 3½ ounces  
Glycerin ..... 5 ounces  
Glacial acetic acid..... ½ ounce

Soak gelatin in water, add glycerin on a water bath, then add the acid.

**Gelatum Acid Salicylic.**  
Gelatin ..... 1 ounce  
Glycerin ..... 4½ ounces  
Water ..... 4 ounces  
Salicylic acid..... 1 ounce

Proceed as in the preceding formula, but reserve some glycerin to make the salicylic acid into a paste, which dissolve in the warm mass.

**Gelatum Chrysarobin.**  
Gelatin ..... ½ ounce  
Water ..... 1 ounce  
Glycerin ..... 8 ounces  
Chrysarobin, in fine powder ..... ½ ounce

Proceed as with "Gelatum Acid Salicylic."

**Gelatum Carrageen (Gelatin of Iceland Moss).**  
Iceland moss..... 1 ounce  
Sugar ..... 2 ounces  
Water ..... 40 ounces

Heat the Iceland moss in the water for ½ hour on a water bath, strain, add the sugar and evaporate to 20 ounces.

**Gelatum Cocaine.**  
Cocaine hydrochloride.... 72 grains  
Gelatin ..... 6 ounces  
Glycerin ..... 36 ounces  
Oil of lemon..... 1 dram  
Tolu water (or any aromatic water) ..... 30 ounces

Soak the gelatin in 25 ounces of water, add the glycerin, heat on water bath, until dissolved, skim. Dissolve the cocaine in 5 ounces of water, add to the hot mass and mix; add oil, stir well and pour into suitable bottles.

**Gelatum Codeine.**  
Codeine phosphate..... 72 grains  
Gelatin ..... 6 ounces  
Glycerin ..... 36 ounces  
Oil of lemon..... 1 dram  
Aromatic water..... 30 ounces

Proceed as with "Gelatum Cocaine."

**Gelatum Copaiba.**  
Copaiba ..... 8 ounces  
Sugar ..... 4 ounces  
Honey ..... 4 ounces  
Water ..... 5 drams  
Oil of peppermint..... 1 dram

Mix the first four ingredients, heat slowly, stirring until the mixture boils; continue to stir till a jelly is formed, cool somewhat, and add the oil of peppermint.

**Gelatum Ichthyol.**  
Gelatin ..... 1 ounce  
Water ..... 2½ ounces  
Glycerin ..... 6 ounces  
Ichthyol ..... 1 ounce

Proceed as with "Gelatum Acid Salicylic."

**Gelatum Iodoform.**

Gelatin .....	1 ounce
Water .....	6½ ounces
Glycerin .....	2 ounces
Iodoform .....	1 ounce

Proceed as with "Gelatum Acid Salicylic."

**Gelatum Naphthol (beta).**

Beta-naphthol .....	5 drams
Gelatin .....	1 ounce
Water .....	6½ ounces
Glycerin .....	2 ounces

Proceed as with "Gelatum Acid Salicylic."

**Gelatum Oil Cod Liver.**

Cod liver oil.....	5 ounces
Gelatin .....	½ ounce
Water .....	1 ounce
Sugar .....	1½ ounces
Flavoring oils.....	10 drops

Soak the gelatin in the water in a 1lb. pot, add the oil, put on a water bath, stirring till the gelatin is dissolved, add the sugar in which the flavoring oils have been incorporated; stir well till dissolved, and continue to stir till the mixture cools and sets.

**Gelatum Zinc (Zinkleim).**

Gelatin .....	3 ounces
Zinc oxide.....	3 ounces
Glycerin .....	5 ounces
Water .....	9 ounces

Proceed as with "Gelatum Acid Salicylic."

**Gelatum Zinc and Sulphur.**

Gelatin .....	3 ounces
Zinc oxide.....	3 ounces
Sulphur .....	1 ounce
Glycerin .....	5 ounces
Water .....	9 ounces

Proceed as with "Gelatum Acid Salicylic."

**Gelatum Zinc and Ichthyol.**

Gelatin .....	3 ounces
Zinc oxide.....	3 ounces
Ichthyol .....	½ ounce
Glycerin .....	5 ounces
Water .....	9 ounces

Proceed as with "Gelatum Acid Salicylic."

**Suppositories Agar-Agar.**

Agar-agar, powdered.....	½ dram
Water .....	15 drams

Shake together in a strong bottle, heat in a water bath till dissolved, and divide into 15 or 30 suppositories.

**Suppositories Agar-Agar with Potassium Iodide.**

Potassium iodide.....	½ dram
Agar-agar .....	½ dram
Water .....	15 drams

Dissolve the iodide in the water and proceed as directed under the preceding formula.

**Suppositories Agar-Agar and Iodoform.**

Iodoform .....	1½ drams
Agar-agar .....	½ dram
Water .....	15 drams

Proceed as in the preceding.

**Suppositories Agar-Agar Compound.**

Many other medicaments can be incorporated with agar-agar suppositories in the same way as directed for making "Suppositories Agar-agar and Potassium Iodide." They are all prepared in the same way.

**Suppositories, Food (Suppositoria Carnis) (Nutrient Suppositories).**

Beef peptone, in powder..	6 drams
Cacao butter.....	1 ounce

Prepare by mixing or melting and divide into 15 suppositories.

**Suppositories Gelatin.**

A gelatin basis for suppositories can also be prepared in the same way as described under "Bougies Gelatin."

**Suppositories Glycerin.**

A great number of formulas for making glycerin suppositories are recommended by various authorities. We give a few of them, but consider the U. S. P. process as good as any of them.

**Suppositories Glycerin.**

Lanolin, 2 grams; glycerin, 2 grams; cacao butter, 1 gram; white wax, 1 gram. The lanolin is first melted with the wax and the cacao butter. Then the glycerin is added and the mass is poured into molds. The molds should be placed in a mixture of ice and salt to prevent a separation of the glycerin. The suppositories are divided so as to weigh 6 grams each, which is heavier than ordinary suppositories, though the bulk is not much greater.

**Suppositories Glycerin.**

Exsiccated sodium carbonate .....	4 parts
Powdered castile soap.....	2 parts
Glycerin .....	90 parts

Heat over water bath until free from foam; then add

Stearin .....	4 parts
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Again heat until free from foam, strain, and pour into molds.

**Suppositories Glycerin.**

Glycerin .....	250 parts
Water .....	200 parts
Powdered castile soap.....	20 parts
Exsiccated sodium carbonate .....	4 parts

Triturate, heat over water bath; add

Stearin .....	15 parts
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Again heat and strain.

**Suppositories Glycerin.**

Dissolve 10 parts of extra hard "dialyzed" stearin soap in boiling water, add to the solution 90 parts of pure glycerin, filter the whole in a steam funnel and evaporate to 100 parts. Then pour the mass into suppository molds. The suppositories thus prepared are firm, transparent, hygroscopic, and when exposed to the air soon become coated with water blisters.

**Suppositories Glycerin Extempore.**

Anhydrous sodium carbonate .....	1 part
Stearin, rasped fine.....	2 parts
Alcohol .....	15 parts
Glycerin, q. s. to make..	60 parts

Mix the sodium carbonate and stearin and pour the alcohol over the mixture. Heat in the water bath to drive off the alcohol, and add the glycerin. Continue the heat until a limpid solution is obtained, then pour into molds set in ice. The whole operation takes about thirty minutes.

**Suppositories Suprarenalin.**

Suprarenalin .....	½ grain
Boric acid.....	1 grain
Water .....	15 drops
Anhydrous lanolin.....	1 dram
Cacao butter .....	1 ounce

Dissolve the suprarenalin and boric acid in the water, mix with the lanolin, add the cacao butter and divide into 25 suppositories.



**Suppositories Morphine Compound.**

Morphine hydrochloride....	½ grain
Cocaine hydrochloride.....	¼ grain
Extract of belladonna.....	¼ grain
Cacao butter.....	30 grains

Make 1 suppository.

**Bassorin Paste.**

Gum tragacanth paste (15 per cent, triturated with water) is filtered in a steam jacketed funnel. By this process a pure mucilage is obtained, while the cellulose, pectin and other impurities remain in the filter. The slimy filtrate is then carefully evaporated. In making the paste, glycerin is added. Another method used to make the paste is to soak 1 part of pure bassorin in 15 parts of water, adding after the paste is formed 25 per cent of white dextrine and 10 per cent of glycerin.

As prepared from salep: Five parts of powdered salep are stirred with 95 parts of cold water until a smooth mucilage is obtained, then heating for half an hour on the steam bath. This contains less bassorin but more starch.

In making bassorin paste employ only moderate heat. The paste made from bassora gum yields a much darker product than that made from gum tragacanth, while from salep root, it is said, the large amount of starch present greatly impedes the process.

**Benzoinated Lard.**

Dissolve in 100 parts of melted lard 1 part of true sublimed benzoic acid, the product being uniform, stable, of a finer appearance, better odor and less reducing power than that prepared in the usual manner.

**Coloring Ointments.**

Color is often imparted to fats by the addition of pigments in powder, but as a rule these are objectionable. The best method to color the ointment, red or crimson, provided the ingredients of the ointment do not antagonize it, is to steep a sufficient quantity of alkanet root to give the desired shade, in a part of the melted ointment base, before mixing with the other ingredients. For yellow, annatto, and for green walnut leaves can be used in the same way.

**PLASTERS.****Plaster Adhesive.**

Plasters are but rarely prepared in the shops, as manufacturers offer a great many for sale ready made. The general formula of the U. S. Pharmacopoeia seems to answer all purposes. As, however, other formulas are sometimes required, a few of the most popular ones are given below:

**Plasters, Adhesive Compound for.**

A compound to be added to the amount of 25 per cent to medicated plasters, to make them adhesive. Ten parts of caoutchouc thoroughly washed and cut into small pieces and liquefied by gentle heating. In another vessel melt 25 parts of anhydrous lanolin and 25 parts of resin, to which then add the melted caoutchouc, constantly stirring. The stirring is to be continued a half hour, and the heat kept at 120° to 130° C. Then raise the heat until the mixture begins to foam in order to produce slight vapors. When all the caoutchouc is fully dissolved, add 10 parts of gum dammar in small pieces, and 50 parts more of resin, and pour the warm solution into porcelain jars for its preservation. For a light colored plaster mass, employ gutta-

percha instead of caoutchouc in equal quantity. The gutta-percha is softened in warm water, thoroughly washed and drawn out into thin ribbons, which are later cut into small pieces.

**Plaster Adhesive.**

Lead plaster .....	10 ounces
Yellow wax .....	1 ounce
Beef suet .....	1 ounce
Soap, powdered.....	1 ounce
Gum dammar.....	2½ ounces
Burgundy pitch.....	2½ ounces

Melt on a water bath, and add sufficient benzole to keep it of a syrupy consistence when cold. It may then be spread on sized muslin with an ordinary brush, and forms an excellent adhesive plaster.

**Plaster Adhesive.**

Resin .....	4 ounces
Japan wax.....	1 ounce
Beef tallow .....	8 ounces
Anhydrous wool fat.....	3 ounces
India rubber.....	2 ounces
Sesame oil.....	1 ounce
Lead oleate .....	80 ounces
Methyl salicylate.....	½ ounce
Thymol .....	½ ounce

Melt the resin, tallow, wool fat and wax together, add the rubber solution (in 5 times its weight of benzine), previously mixed with the oil. Heat gently to drive off the benzine, add the melted oleate, finally add the methyl salicylate and thymol.

**Plaster Adhesive.**

Powdered gum dammar....	560 parts
Oil of sweet almonds.....	140 parts
Castor oil .....	70 parts
Glycerin .....	30 parts
Aniline red, sufficient quantity.	
Spirit of ether (equal quantities of ether and spirit) .....	225 to 240 parts

The first four ingredients are to be heated in a copper vessel until the resin is fused, the aniline red then added, and when the mixture has half cooled the spirit of ether is to be poured in. An emulsive liquid is thus formed of the consistency of syrup. A layer is then spread on a material previously coated with a mucilage of starch flour or isinglass. The court plaster so made is said to be strongly adhesive, bright and shining, and free from any irritating effect on the skin.

**Plaster Adhesive Fluid.**

Dammar resin, powdered..	560 parts
Oil of almonds.....	142 parts
Castor oil .....	70 parts
Best glycerin .....	10 parts

Melt till the mass flows smoothly, and when half cold add by degrees 225 to 240 parts of spirit of ether, in which aniline, free from arsenic, or any other coloring matter, has been dissolved. The plaster thus obtained is of the consistency of a balsam. The dammar resin is easily soluble in fat oils; by the addition of spirit of ether it is partly precipitated, but in a very finely divided, doughy state.

**Emplastrum Antapoplecticum.**

Galbanum .....	15
Pyrethrum root .....	5
Long pepper .....	5
English castor.....	5
Gum turpentine .....	10
Yellow wax .....	10

**Plaster Burgundy.**

Burgundy pitch.....	70 parts
Yellow wax.....	30 parts

**Plaster Cantharides.**

Cantharides, in fine powder	6 ounces
Canada balsam.....	8 ounces
Yellow wax.....	5 ounces
Lard .....	1½ ounces

The wax, lard and balsam are melted together; the cantharides then added, and allowed to macerate for several hours. The disadvantage of brittleness during the winter months is entirely overcome by this modification. The plaster, while sufficiently adherent, is readily removed without tearing the blister.

**Plaster Cantharidin.**

Yellow wax .....	400 parts
Beef suet .....	100 parts
Venice turpentine .....	100 parts
Cantharidin .....	5 parts

**Plaster Caoutchouc.**

The base of the plaster consists of lanolin, benzoated suet, caoutchouc and dammar resin in varying proportions, a small amount of glycerin being added to prevent cracking from exposure to the air. The solution of caoutchouc is made by macerating the commercial gum in 5 times its weight of benzene, when it first swells out and after 3 or 4 days is completely dissolved.

**Plaster Caoutchouc and Zinc oxide.**

Dammar resin.....	15 parts
Benzoated suet.....	25 parts
Lanolin .....	15 parts
Caoutchouc plaster.....	5 parts
Glycerin .....	20 parts
Zinc oxide.....	20 parts

The resin is melted, the suet added, and the whole strained through 3 or 4 folds of muslin, and while still warm the lanolin and solution of caoutchouc are briskly stirred in. Finally, the benzene is carefully evaporated, protecting from the fire. The zinc oxide is smoothly rubbed up with the glycerin and is added to the mass, which is worked until the mixture is uniform.

**Plaster Caoutchouc and Iodoform.**

Resin .....	15 parts
Suet .....	30 parts
Lanolin .....	20 parts
Caoutchouc .....	5 parts
Glycerin .....	10 parts
Iodoform .....	20 parts

And the process of manipulation is similar to that above, except that the iodoform rubbed with the glycerin is added to the cooled mass to avoid evaporation.

Other plasters suggest themselves—mercury, for instance, being worked up with the lanolin and added to a lukewarm mixture of the suet, resin and caoutchouc solution, from which the benzene has been evaporated.

**Plaster Court.**

Sew together 2 meters of silk taffeta, each ½ meter wide, so as to form a piece of 1 meter square (or prepare in a similar manner, a piece of 1 yard square), and stretch it tightly on a frame.

Cut 100 grams of best isinglass into small pieces, heat it twice on a water bath, with a small quantity of water, evaporate the strained liquid to 600 grams and then add 2 grams of glucose.

To prevent the first application from soaking too far through the fabric, it should be applied cold, and in a cold room, by means of a hair-brush of at least 2 inches in breadth, care being taken that every part of the surface is coated only twice without pressure. Any apparent inequalities thus produced are equalized during subsequent

applications. These precautions must be observed during the first 3 applications, each of which must be made in a direction diagonal to the preceding. Subsequent applications, likewise alternating in direction, may be made in a moderately warm room, and must be continued until the mixture is consumed. Should anything be left over, not sufficient for a whole application, it is to be diluted with a little water to make a sufficiently large volume. Each subsequent application must be made only after the preceding one has become completely dry.

Finally, while the fabric is still stretched over the frame, the back is coated with tincture of benzoil diluted with an equal quantity of alcohol (some use a colorless resin solution). When dry it is removed from the frame, the seam is cut out, and the plaster rolled up so that the spread surface is on the outside.

**Plaster Court Arnicated.**

Proceed as directed in the preceding formula, except that the solution of isinglass is divided into two halves, the first of which is applied as such, while the second is mixed with 50 grams of tincture of arnica.

**Plaster Court Benzoated.**

Prepared like the last, only that 2 grams of benzoic acid dissolved in alcohol are added, instead of the tincture of arnica.

**Plaster Court Salicylated.**

Like the preceding, except that 2 grams of salicylic acid dissolved in alcohol are used.

**Plaster Court (Deschamps).**

A piece of fine muslin, linen or silk is fastened to a flat board, and a thin coating of smooth, strained flour paste is given to it; over this, when dry, two coats of colorless gelatin, made into size, with water, quantity sufficient, are applied warm.

**Court Plaster, Liquid.**

Under the name of "liquid court plaster," a number of preparations have lately been introduced, which are all modifications of collodions, of which a few typical formulas are given:

**Court Plaster, Liquid.**

Pyroxylin .....	5 drams
Camphor .....	1 dram
Acetone .....	12½ ounces

Dissolve the pyroxylin and camphor in a bottle in 10 ounces of acetone, and add sufficient acetone to make the product measure 12½ ounces.

**Court Plaster, Liquid.**

Pyroxylin .....	1 dram
Oil of cloves.....	½ dram
Amyl acetate.....	5 drams
Benzole .....	4 drams
Acetone, enough to make.	20 drams

Dissolve and mix.

**Plaster Diachylon.**

Four parts of lard, 4 parts of olive oil, 4 parts of sifted litharge, and one of water, are boiled gently on a moderate fire, with constant stirring and addition of water. When the litharge is completely dissolved, and, on cooling, a sample can be kneaded by the fingers without sticking, the vessel is taken off, first hot water and then half as much cold water are added to the contents, and the whole thoroughly stirred together. This process is repeated after pouring off the first water: then the water is evaporated and the plaster rolled out.

**Plaster Diachylon and Gum.**

Lead Plaster.....	1,500 parts
Yellow wax.....	250 parts
Olive oil.....	50 parts
Burgundy pitch.....	100 parts
Turpentine .....	150 parts
Ammoniac .....	30 parts
Elemi .....	100 parts
Galbanum .....	30 parts
Sagapenum .....	30 parts

Dissolve the four gums in alcohol and evaporate the solution almost to the consistence of an extract. Melt the other ingredients and with these incorporate the residue. The solution in alcohol is sometimes omitted, the whole being merely melted together.

**Plaster Iodoform.**

Iodoform, in fine powder..	1 part
Adhesive, plaster .....	2 parts
Lead plaster .....	2 parts

**Plaster Lead, to Heighten Tenacity of.**

Use vaseline, being careful to use only the proper proportions. For a plaster of two months of age 6 per cent. of vaseline is sufficient, while 10 per cent. is required for a plaster a year or more old. A crumbling specimen needs about 6 per cent. For spreading nicely, if the plaster is to be used within a few weeks, 5 to 6 per cent. of vaseline is sufficient, but for long preservation use 8 per cent. An advantage from the use of vaseline is that the plaster never develops a rancid odor, as is the case with vegetable oils.

**Plaster Menthol.**

Lead plaster .....	75 parts
Beeswax, yellow .....	10 parts
Resin .....	5 parts
Menthol, any desired percentage.	

Melt the lead plaster, wax and resin together with gentle heat; remove from the fire and add the menthol.

**Plaster Mercury.**

Dammar, 20; tallow, 34; lanolin, 20; caoutchouc, 6; mercury, 20 parts. Rub the mercury with the lanolin until no globules remain visible, and add this to the nearly cool mixture of the other ingredients, prepared as above stated.

**Plaster Opium.**

Lead plaster, 1 pound; melt, add of powdered thus, 3 ounces; mix, and further add of powdered opium,  $\frac{1}{2}$  ounce; water, 8 fluid ounces, and boil to a proper consistence.

**Plaster Opium.**

Litharge plaster, 12 ounces; Burgundy pitch, 3 ounces; liquefy by heat, then add by degrees, of powdered opium  $\frac{1}{2}$  ounce, and mix them thoroughly.

**Plaster Opium.**

Powdered opium, 1 ounce; resin plaster, 9 ounces. Melt the plaster and add the opium.

**Plaster Potassium Iodide.**

Olibanum .....	6 drams
Yellow wax .....	1 dram
Olive oil .....	2 drams
Potassium iodide .....	1 dram

Heat the olibanum and wax; remove from the heat; add the oil, and last the iodide of potassium in fine powder, stirring it thoroughly.

**Plaster Tar.**

Tar .....	40.0
Black pitch .....	20.0
Burgundy pitch .....	20.0
Yellow wax .....	20.0

**Plaster Quinine.**

Quinine oleate.....	1 ounce
Beeswax .....	4 ounces
Yellow resin .....	3 ounces
Suet .....	3 ounces

Melt the beeswax, resin and suet together, stir constantly, adding the oleate of quinine while cooling.

**EMULSIONS.****A General Formula.**

To one part of powdered acacia in a dry mortar add 2 parts of oil; mix, then add  $1\frac{1}{2}$  parts of water all at once; then, with a dozen whirls of the pestle, the union is complete, as indicated by the crackling noise and change of color; then dilute with care, ad lib. With oils like cod liver oil, castor, etc., and balsams, one-half the quantity of acacia, or less, will answer, but if you change the quantity of acacia, you must observe the exact proportion of water, as given above, that is to be added in the first instance, i. e., one half of the combined quantities of acacia and oil.

**Casein as an Emulsifying Agent.**

Separate the casein from milk by first adding water of ammonia—about two ounces to the gallon—to saponify the fatty matter; after standing at rest twenty-four hours the milk is skimmed, and the casein precipitated by addition of acetic acid. The curd is collected and pressed strongly, and sodium bicarbonate, 150 grains for each gallon of milk, is added, together with sugar, about three pounds for each gallon, and the whole thoroughly mixed and completely desiccated.

This saccharated casein may be substituted for acacia in the preparation of emulsions either of fixed oils, balsams, oleo-resins, or even volatile oils—the manipulations being the same as those ordinarily pursued. For balsams, oleo-resins and volatile oils, it is sufficient to add alcohol enough to produce a solution, and shake this in a bottle with an equal volume of a 30 per cent aqueous solution of the saccharated casein, afterwards adding the remainder of the water, little by little. The emulsions are said to be remarkably permanent and to be palatable and acceptable to the stomach.

**Condensed Milk for Emulsions.**

To make a pint of emulsion containing 50 per cent of oil, take of

Oil .....	8 fl. ounces
Condensed milk.....	3 fl. ounces
Glycerin or syrup.....	3 fl. ounces
Water .....	2 fl. ounces

Rub the condensed milk around in a dry mortar, and gradually add the oil, working it in as is directed for making emulsions generally. When thoroughly incorporated add the glycerin, and lastly the water. Flavor as desired.

**Emulsion of Irish Moss.**

Irish moss .....	$1\frac{1}{2}$ drams
Water .....	4 ounces
Glycerin (or syrup).....	2 ounces
Oil .....	8 ounces
Water, enough to make...	1 pint

Dissolve the Irish moss, after washing it, on a water bath in the water, strain, put in a suitable bottle, add the oil in portions, shaking after each addition; then add the glycerin and enough water to make 1 pint.



**Emulsion of Dextrin.**

Oil .....	8 ounces
Dextrin .....	1½ ounces
Water .....	4 ounces
Glycerin (or syrup).....	2 ounces
Water, enough to make...	1 pint

Heat the mixture of dextrin and water with constant stirring, strain, and put in a suitable bottle, adding the oil in small portions. Shake after each addition, then add the syrup and enough water to make 1 pint.

**Emulsion with Egg.**

Oil .....	8 ounces
Yolks of two eggs .....	
Syrup .....	2 ounces
Water, enough to make...	1 pint

Mix the yolks of eggs with a little water, add the oil and stir briskly, add the syrup and stir again; finally add the remainder of the water, stirring briskly all the time.

**Emulsions, Flavoring and Sweetening.**

The flavoring of emulsions is generally done by the addition of aromatic oils. They may be mixed with the oil to be emulsified or added afterwards to the emulsion. Sweetening can be done by syrups, glycerin or saccharin. Two to three ounces of syrup to the pint are generally sufficient. Aromatic syrups may be used for flavoring and sweetening.

**Emulsion Flavor.**

For one pint of emulsion use:	
Oil of wintergreen .....	16 drops
Oil of sassafras .....	16 drops

**Emulsion Flavor.**

For one pint of emulsion use:	
Compound spirit of orange 15 drops	

**Emulsion Flavor.**

For one pint of emulsion use:	
Oil of wintergreen .....	16 drops
Oil of bitter almond.....	2 drops
Oil of coriander .....	2 drops

**Emulsion Flavor.**

For one pint of emulsion use:	
Oil of wintergreen .....	12 drops
Oil of sassafras .....	12 drops
Oil of bitter almond.....	2 drops

**Emulsion Flavor.**

For one pint of emulsion use:	
Oil of neroli .....	12 drops
Oil of bitter almond.....	12 drops
Oil of cloves .....	2 drops

**Emulsion Flavor.**

For one pint of emulsion use:	
Oil of cloves .....	8 drops
Oil of bitter almond.....	2 drops
Tincture of vanilla.....	30 drops

**Emulsion Flavor.**

For one pint of emulsion use:	
Oil of bitter almond.....	2 drops
Oil of mace .....	6 drops
Oil of cinnamon .....	6 drops
Oil of neroli .....	2 drops

**Emulsion Copaiba.**

Copaiba .....	2 ounces
Powdered gum arabic.....	1 ounce
Syrup .....	2 ounces
Oil of peppermint.....	16 drops
Distilled water, enough to make .....	1 pint

Proceed as under "General Formula."

**Emulsion Creosote.**

Creosote .....	2 drams
Oil of sweet almond.....	5 ounces
Gum arabic .....	4 ounces
Mint water, enough to make .....	1 pint

Mix the creosote and the oil and proceed as under "General Formula."

**Emulsion Oil Castor.**

Castor oil.....	4 troy ounces.
Powdered gum arabic.....	1 troy ounce
Distilled water .....	1½ ounces
Syrup .....	3 fl. ounces
Cinnamon water .....	3 fl. ounces
Spirit of cinnamon.....	12 minims

Emulsify the oil with the gum and distilled water, then add the other ingredients gradually with constant trituration. This emulsion contains 33 per cent of castor oil.

**Emulsion Oil Castor.**

Castor oil.....	1 fl. ounce
Powdered acacia.....	3 drams
Oil of bitter almonds.....	2 minims
Oil of cloves .....	1 minim
Saccharin .....	1 grain
Water, enough to make...	4 fl. ounces

Mix the oils with the gum in a dry mortar, add ½ fluid ounce of water at once, stirring until an emulsion is formed. Then add the saccharin, previously dissolved in water by the aid of ½ grain sodium bicarbonate, and finally the remainder of the water.

**Emulsion Oil Chenopodium.**

Celery seed.....	2 drams
Purified extract of licorice	1 dram
Powdered acacia.....	5 drams
Oil of chenopodium .....	30 minims
Oil of almond (expressed). ½ ounce	
Sugar .....	4 drams
Water, enough to make...	4 ounces

Mix the seed with the extract and reduce to a very fine powder; triturate with sufficient water to form a thin liquid, and strain with expression. Emulsify the mixed oils in a dry mortar, with the acacia and sugar, using a little water if the paste becomes too thick. Finally, add the strained liquid and form a perfect emulsion; add water to make the liquid measure 4 fluid ounces.

**Emulsion Oil Cod Liver.**

Take of cod liver oil, 40 fluid ounces; tragacanth, in powder, 200 grains; simple tincture of benzoin, 1½ fluid ounces; spirit of chloroform, ½ fluid ounce; glycerin, 2 fluid ounces; oil of cassia, 2 fluid drams; distilled water, a sufficient quantity. Place the oil in a dry bottle and pour in the tragacanth, tincture of benzoin and spirit of chloroform, previously well mixed; agitate briskly for a minute, then add all at once 1 pint of distilled water, and agitate as before. Lastly, add the essential oil, glycerin, and sufficient distilled water to produce 4 pints.

**Emulsion Oil Cod Liver (Cremor Morrhuae).**

Cod liver oil.....	6 drams
The yolk of one egg.....	
Powdered tragacanth.....	10 grains
Saccharin elixir.....	½ dram
Tincture of benzoin.....	40 minims
Spirit of chloroform.....	3 drams
Oil of wintergreen .....	5 minims
Oil of sassafras .....	5 minims
Oil of bitter almond.....	2 minims
Water, enough to make...	12 ounces

Put the tragacanth in a dry mortar and triturate it with a little of the oil, then add the egg yolk and stir briskly, adding water until the mixture thickens; add a little more

oil, then more water, and so on alternately, diligently stirring all the time, until 4 ounces of water have been so used and the whole of the cod liver oil. Transfer to a pint bottle, add the elixir, tincture, spirit and essential oils, previously mixed; shake well and make up to 12 ounces with water.

For an emulsion containing hypophosphites dissolve in the water 48 grains each of calcium and sodium hypophosphites.

#### Emulsion Oil Cod Liver, Pancreatic.

Saccharated pancreatin....	1 ounce
Water .....	4 fl. ounces
Sugar .....	7 ounces
Cod liver oil.....	1½ pints
Oil of wintergreen .....	20 drops
Oil of bitter almonds.....	5 drops

With the saccharated pancreatin, sugar and water form a thick syrup; to this add the oils and mix by agitation. An emulsion is readily formed which is preferable to the thick, mucilaginous emulsions, made with gum arabic or tragacanth. It separates on standing, but is readily mixed again on agitating. If it is desirable to have the emulsion white, substitute a little lime water for an equivalent quantity of water.

#### Emulsion Oil Cod Liver and Extract Malt.

Cod liver oil.....	4 fl. ounces
Tragacanth, in powder....	12 grains
Extract of malt.....	3 fl. ounces
Water .....	1 fl. ounce

Mix the tragacanth by trituration with the extract of malt; then add the cod liver oil gradually, with uninterrupted trituration; place in a 12-ounce bottle and shake vigorously for a few minutes.

#### Emulsion Oil Cod Liver and Extract of Malt.

Moderately warmed malt extract, 8 ounces, are triturated with 8 ounces cod liver oil, added in small portions, so as to insure thorough admixture; if the preparation becomes too thick, add a small quantity of water.

#### Oil Cod Liver Ferrated.

Ferric chloride.....	3 parts
Cod liver oil.....	.997 parts

Dissolve the ferric chloride by triturating it in a mortar with the oil gradually added, then filter. The product is a clear reddish-brown liquid, containing 1 per cent of iron. This preparation has heretofore been usually made with ferric benzoate, but the latter salt is not soluble in cod liver oil in the cold. On the other hand, heating increases the fishy taste of the oil.

#### Oil Cod Liver Iodized.

Iodine .....	1 part
Chloroform .....	3 parts
Cod liver oil.....	.996 parts

Triturate the iodine in a mortar with the chloroform, and gradually add the oil until solution has taken place. The product has the same color, odor and taste as the original oil. When shaken with gelatinized starch, it should not color the latter.

#### Oil Cod Liver Ferro-Iodized.

Iron, in powder.....	2 parts
Iodine .....	4 parts
Cod liver oil, enough to make .....	1,000 parts

Triturate the iron and iodine in a mortar with 40 parts of cod liver oil and a little ether until all the iodine has disappeared and a black mixture has resulted; mix this with enough cod liver oil to produce 1,000 parts, and filter. The product has a brownish-red color, and contains 5 per cent of ferrous iodide.

#### Oil Cod Liver Chalybeate.

Brown cod liver oil,	
Distilled water, of each..	8 ounces
Carbonate of soda, cryst..	¾ drams
Sulphate of iron.....	3 2/3 drams

The sulphate of iron and carbonate of soda are dissolved separately in distilled water; the solutions are then mixed and added immediately to the oil. The mixture is kept in a wide-mouth bottle, exposed to the air and repeatedly shaken for eight days, after which the oil is separated from the solution of sulphate of soda and filtered. This contains about 1 per cent of sesquioxide of iron. It requires to be kept without exposure to the air, as it soon becomes rancid and even resinifies.

#### Emulsion Cod Liver Oil and Hypophosphites.

Prepare an emulsion of cod liver oil by any of the formulas given, preferably following the "General Formula," previously given. Add flavoring and sweetening as desired and dissolve the required hypophosphites in the remainder of the water and add to the emulsion.

#### Emulsion Cod Liver Oil and Pancreatin.

Pancreatin .....	40 grains
Sodium bicarbonate.....	200 grains
Emulsion, enough to make..	1 pint

Dissolve the pancreatin and sodium bicarbonate in part of the water when making the emulsion and add to the rest of the emulsion previously made.

#### Emulsion Petroleum.

Liquid petrolatum.....	8 ounces
Acacia, powdered.....	4 ounces
Tragacanth, powdered....	2 drams
Saccharin .....	2 grains
Flavoring oils.....	½ dram
Sodium hypophosphite....	3 drams
Calcium hypophosphite....	3 drams
Water, enough to make...	24 ounces

Prepare an emulsion with the petrolatum, acacia, tragacanth, and 8 ounces of water; add the saccharin and flavoring oils, and finally the hypophosphites dissolved in the remainder of the water.

#### Emulsion Oil Olive.

Tincture of opium.....	12 minims
Olive oil, pure.....	6 drams
Acacia, powdered.....	3 drams
Cherry laurel water.....	2 drams
Water, enough to make...	6 ounces

Mix the oil and acacia and 4½ ounces of water. Make an emulsion and then add the other ingredients.

#### Emulsion Phosphoric.

Phosphoric acid, dilute...	1½ ounces
Yolks of three eggs.	
Cod liver oil.....	8 ounces
Glycerin .....	2½ ounces
Oil of bitter almond.....	10 minims
New England rum.....	8 ounces
Orange flower water	
enough to make.....	32 ounces

Proceed as directed under "Emulsion with Egg," adding the rum last.

#### Emulsion Pumpkin Seed and Male Fern.

Pumpkin seed .....	5 ounces
Sugar .....	4 ounces
Extract of male fern.....	1 ounce
Water, enough to make...	1 pint

Bruise the pumpkin seed thoroughly with 1 ounce of sugar and 1 ounce of water. When a homogeneous paste is obtained add the extract of male fern, then the remainder of the sugar and water. Mix well.

**Emulsion Cod Liver Oil Phosphorated.**

Phosphorated oil ..... 40 drops

Emulsion ..... 1 pint

Add the phosphorated oil to the cod liver oil before emulsifying.

**Emulsion Salicylic.**

Salicylic acid ..... 3 drams

Powdered acacia.....1½ ounces

Almond oil..... 3 ounces

Syrup ..... 2 ounces

Orange flower water,  
enough to make..... 1 pint

Make an emulsion of the acacia, oil, and 3 ounces of water. Then add the salicylic acid rubbed fine with a little syrup, and then the remaining ingredients.

**Emulsion Salol.**

Salol ..... 1 ounce

Gum arabic.....1½ ounces

Gum tragacanth.....½ ounce

Tincture of tolu..... 2 ounces

Syrup of tolu..... 6 ounces

Water, enough to make..... 1 pint

Proceed as directed under "Emulsion Salicylic," dissolving the salol in the tincture before adding.

**Emulsion Santal, Cubeb and Buchu.**

Oil of santal ..... ½ ounce

Oil of cubeb ..... 2 drams

Tincture of buchu..... 5 drams

Acacia ..... ½ ounce

Tragacanth ..... ¼ ounce

Flavoring oils..... 1 dram

Water, enough to make... 1 pint

Prepare an emulsion, adding the tincture of buchu last.

**Emulsion Terebene.**

Terebene .....160 minims

Cottonseed oil.....160 minims

Powdered acacia.....360 grains

Powdered sugar.....120 grains

Water to make..... 4 fl. ounces

The terebene is to be mixed with the cottonseed oil and then emulsified in the usual manner.

**FLUIDEXTRACTS.****Fluidextract Cascara Sagrada.**

Cascara sagrada (40 powder) .....100 parts

Calcined magnesia..... 1 part

Alcohol .....100 parts

Water, enough to make...200 parts

Mix the alcohol with the water in the proportion of 2 to 3 of water; moisten the mixed powders thoroughly with the menstruum, and let it stand until the bitterness disappears; then pack in a percolator and percolate, adding more water, if necessary, until 200 parts extract is obtained. Sweeten with glycerin and flavor with any aromatics to taste.

**Fluidextract Cascara Sagrada (Miscible).**

Cascara sagrada, 1 year

old, No. 20 powder..... 1 pound

Rectified spirit..... 4 fl. ounces

Distilled water, q. s.

Moisten the bark with a portion of the water; allow it to remain for a few hours to soften and swell; place loosely in a percolator, and percolate with more water until exhausted. Evaporate on a water bath to the consistency of a brittle extract, which, when

cold, treat with cold water until thoroughly disintegrated. Allow this to stand and settle. Strain through flannel, and evaporate the strained liquor to 12 fluid ounces, and add the rectified spirit when cold.

**Fluidextract Cascara Sagrada.**

Take of cascara bark, in No. 40 powder, 1 pound; calcined magnesia, 2 ounces; distilled water, 1½ pints; proof spirit, a sufficient quantity. Mix the powder in a large mortar, and beat to a thin paste with the water. Allow to stand for 12 hours, and dry over a water bath. Reduce the dry mass to powder, moisten with 18 fluid ounces of proof spirit, and pack tightly in a series of 6 percolating tubes. Percolation is then effected by means of proof spirit, passing the percolate from the first tube through the second, and from the second through the third, and so on. The first 14 ounces that pass through the last (the 6th) tube is set aside, the percolation continued to exhaustion, the weak percolate, evaporated to the consistency of a syrup, mixed with the reserve, and the measure brought to 16 fluid ounces with proof spirit.

**Fluidextract Corn Silk.**

Green corn silk..... 16 troy ounces

Alcohol ..... 25 troy ounces

Water ..... 25 troy ounces

Glycerin ..... 2 fl. ounces

Macerate the corn silk 1 week in 12 ounces of alcohol. Press through fruit press, then pack in a percolator, add 4 ounces of water to the expressed extract and percolate the corn silk with this menstruum. Reserve the first 14 ounces, and continue the percolation with dilute alcohol until the drug is exhausted or until about 24 ounces of percolate have been obtained. Add the glycerin, evaporate to about 2 ounces, and add the reserved portion; filter if necessary.

**Fluidextract Hydrangea Arborescens**

Hydrangea root, in fine

powder ..... 16 ounces

Alcohol,

Diluted alcohol, of each quantity

sufficient.

Moisten the powder with alcohol; after 24 hours pack it in a percolator, and add enough alcohol to obtain 12 ounces of percolate, and set it aside. Then add diluted alcohol until the root is exhausted, evaporate this to 4 fluid ounces, and add to it the 12 ounces first obtained so as to make 1 pint of fluidextract.

**Fluidextract Licorice for Masking the Taste of Quinine.**

Dry licorice extract..... 4 ounces

Hot water..... 4 ounces

Glycerin ..... 4 ounces

Dissolve and let cool, and to the solution add:

Alcohol ..... 2 ounces

Distilled water ..... 1 pint

One dram of this solution masks the taste of about 3 grains of quinine.

**Fluidextract Licorice for Masking the Taste of Quinine.**

Acacia, in fine powder... ½ ounce

Extract of glycyrrhiza, in

fine powder..... ½ ounce

Sugar ..... ½ ounce

Spirit of nitrous ether.... 1 fl. ounce

Wine of antimony..... 1 fl. ounce

Camphorated tincture of

opium ..... 2 fl. ounces

Distilled water..... 12 fl. ounces

Having mixed well the powders, add 6 fluid ounces of water gradually and rub to



a paste. Place this in an evaporating dish and heat until perfectly fluid. Add the spirit of nitrous ether, wine of antimony and paregoric, and enough water to make the required amount.

#### Fluidextract of Rhubarb and Senna.

Fluidextract of senna .....	12 fl. ounces
Fluidextract of rhubarb ..	4 fl. ounces
Potassium bicarbonate....	½ ounce
Tincture of ginger.....	1 fl. ounce
Oil of cloves .....	8 minims
Oil of anise .....	16 minims

Dissolve the bicarbonate in the fluidextracts, add the tincture containing the oils, and mix.

#### Fluidextract Triticum.

Triticum rhizome, in No.	
20 powder.....	10 ounces
Rectified spirit,	
Distilled water, of each..	q. s.

Moisten the powder with 4 fluid ounces of distilled water, pack in a percolator, and pour boiling distilled water upon it until it is exhausted. Evaporate the percolate to 15 fluid ounces, add to it 5 fluid ounces of rectified spirit, mix, and set aside for 48 hours. Then filter the liquid, and add to the filtrate enough of a mixture composed of 3 fluid parts of distilled water and one of rectified spirit to make the liquid extract measure one pint.

#### Fluidextracts, Non-Alcoholic.

These alcoholic fluids, so-called, are supposed to represent the water soluble constituents of the drugs. The following is a type:

Pinus canadensis, No. 40 powder .....	32 troy ounces
Water, .....	1 part
Alcohol, 2 parts, sufficient.	

Moisten the drug with a sufficient amount of the menstruum and allow to macerate in a percolator for 12 hours. Then percolate to exhaustion with the menstruum, recover the alcohol by distillation, and evaporate the remaining solution to 8 fluid ounces, and finally add 8 fluid ounces of glycerin and mix thoroughly.

#### Fluidextract Calendula, Non-Alcoholic.

Calendula (flowering herb),	
No. 40 powder.....	16 troy ounces
Alcohol .....	1 part
Water, 2 parts, sufficient.	
Glycerin .....	8 fl. ounces

Proceed as above.

Non-alcoholic witchhazel can be made as the calendula, simply substituting properly ground witchhazel in the formula.

## POWDERS.

#### Powder Acacia Compound.

Acacia, powdered.....	50 grains
Licorice, powdered.....	34 grains
Sugar, powdered.....	16 grains

Mix.

#### Powder Acacia and Tragacanth.

Acacia, powdered,	
Tragacanth, powdered, equal parts.	

Mix.

#### Powder Alkaline Comp.

Pepsin .....	3 ounces
Aromatic powder.....	3 ounces
Sodium bicarbonate.....	1 ounce
Magnesium carbonate,	
heavy .....	½ ounce

Mix.

#### Powder Alkaline Comp.

Sodium bicarbonate .....	3 drams
Sodium chloride .....	3 drams
Sodium biborate .....	2 drams

Mix. For the nasal douche.

#### Powder Almonds Comp.

Sweet almonds.....	8 ounces
Sugar .....	4 ounces
Gum acacia.....	1 ounce

Blanch the almonds, dry and powder, then mix with sugar and acacia.

#### Powder Anise.

Calcined magnesias.....	1 ounce
Powdered rhubarb.....	1 dram
Oil of anise.....	30 drops

Tincture of rhubarb quantity sufficient to color pink.

Mix and triturate thoroughly.

#### Powder Antiasthmatic.

Lobelia, in fine powder..	2 ounces
Stramonium, in fine powder .....	2 ounces
Potassium nitrate, powdered .....	1 ounce

Mix.

#### Powder Antiasthmatic Comp.

Powder antiasthmatic (see preceding) .....	5 ounces
Powdered anise seed.....	2 drams
Powdered fennel seed.....	2 drams

Mix.

#### Powder Aperient (for children).

Jalap .....	½ ounce
Calomel .....	½ ounce
Antimonial powder.....	2 drams
Oil of cassia.....	15 drops
Sugar .....	1 ounce

Mix. Dose 6 to 20 grains.

#### Powder Aromatic.

Cinnamon .....	2 ounces
Nutmeg .....	1 ounce
Saffron .....	1 ounce
Cloves .....	½ ounce
Cardamom .....	½ ounce
Sugar, enough to make...	16 ounces

Reduce to fine powder and mix.

#### Powder Basilicus.

Powdered scammony.....	1 ounce
Calomel .....	1 ounce
Antimonial powder.....	1 ounce
Cream tartar.....	1 ounce

Mix.

#### Powder Bismuth Compound.

Bismuth subnitrate.....	9 ounces
Sodium bicarbonate.....	4 ounces
Powdered rhubarb.....	2 ounces
Aromatic powder.....	1 ounce

Mix.

#### Powder, Blood Purifying.

Dried Glauber salt .....	2 ounces
Dried Epsom salt .....	8 ounces
Common salt.....	1 ounce
Tartaric acid.....	1½ ounces
Sodium bicarbonate.....	3½ ounces

Mix well.

#### Powder, Burn.

Zinc oxide .....	1 ounce
Magnesium carbonate, light	1 ounce
Boric acid.....	1 ounce

Mix.

**Powder Calumba Compound.**

Bismuth subnitrate..... 3 parts  
 Sodium bicarbonate..... 3 parts  
 Gum arabic..... 3 parts  
 Rhubarb root ..... 1½ parts  
 Calumba root..... 1½ parts  
 Cinnamon bark..... 1½ parts  
 Ginger ..... 1½ parts  
 Mix well.

**Powder, Cancer.**

Calomel ..... 8 grains  
 Arsenous acid..... 1 grain  
 Morphine hydrochloride... 1 grain  
 Acacia, powdered..... 40 grains

**Powder Casein, Soluble.**

Casein ..... 8½ drams  
 Sodium bicarbonate..... 1½ drams  
 Water ..... 2 ounces

Mix in a mortar, after effervescence ceases, dry the magnesia and powder.

**Powder Catechu Compound.**

Catechu, powdered..... 4 ounces  
 Kino, powdered..... 2 ounces  
 Rhatany, powdered..... 2 ounces  
 Cinnamon, powdered..... 1 ounce  
 Nutmeg, powdered..... 1 ounce  
 Mix thoroughly.

**Powder, Children's.**

Calomel ..... 1 dram  
 Sugar ..... 5 drams  
 Mix.

**Powder, Children's.**

Potassium chlorate..... 1 dram  
 Powdered licorice..... 1 dram  
 Sugar ..... 4 drams  
 Mix.

**Powders, Children's, Worm.**

Santonin ..... 1 dram  
 Calomel ..... 1 dram  
 Sugar ..... 4 drams  
 Mix. Dose, 1 to 6 grains.

**Powder Cinnamon Comp.**

Cinnamon, in powder,  
 Cardamom, in powder,  
 Ginger, in powder, of each equal parts.  
 Mix.

**Powder Chlorate Potassium Comp.**

Sodium biborate ..... ½ ounce  
 Sodium bicarbonate ..... ½ ounce  
 Potassium chlorate..... ½ ounce  
 Sugar ..... 1 ounce  
 Mix.

**Powder Cooling.**

Calomel ..... 1 dram  
 Sugar ..... 5 drams  
 Mix.

**Powder Eccoprotic.**

Rhubarb, powdered,  
 Magnesia, calcined, of each 1 ounce  
 Mix.

**Powder, Fever.**

Calomel ..... 1 grain  
 Cream tartar..... 3 grains  
 Carmine, enough to color.  
 Mix.

**Powder, Gout.**

Colchicum seed, powdered. 20 grains  
 Magnesium sulphate, exsiccated ..... 6 ounces  
 Mix.

**Powders Guarana Compound (Nerve Powders).**

Guarana paste..... 1.0  
 Aromatic powder..... 0.25  
 Sugar of milk..... 0.5

For 1 powder.

Guarana paste is made by mixing 30 parts of finely powdered guarana with 1,000 parts of chocolate.

**Powder, Headache.**

Caffeine ..... 1 grain  
 Acetanilide ..... 5 grains  
 Sodium bicarbonate..... 5 grains  
 Mix.

**Powder, Headache and Tic.**

Acetanilide ..... 5 grains  
 Antipyrine ..... 5 grains  
 Caffeine citrate..... 1 grain  
 Mix.

**Powder Kino Comp.**

Kino, fine powder..... 15 grains  
 Opium, fine powder..... 1 grain  
 Cinnamon, fine powder... 4 grains  
 Mix.

**Powder Licorice Aromatic.**

Prepared by thoroughly mixing 2 drams of aromatic powder, 6 drams of powdered extract of licorice, and 15 grains of carbonate of ammonium.

**Powder Licorice Compound.**

Senna ..... 2 parts  
 Licorice powder ..... 2 parts  
 Fennel ..... 1 part  
 Sulphur (sublimed) ..... 1 part  
 Cream of tartar..... 4 parts  
 Sugar ..... 2 parts

**Powder Licorice Compound, Modified.**

Powdered senna ..... 2 parts  
 Powdered licorice root... 2 parts  
 Anise ..... 1 part  
 Sulphur ..... 1 part  
 Sugar ..... 5¼ parts  
 Powdered ginger ..... ¼ part

**Powder Lobelia Compound.**

Lobelia, fine powder..... 3 drams  
 Bloodroot, fine powder... 1½ drams  
 Skunk cabbage, fine powder ..... 1½ drams  
 Ipecac, fine powder..... 2 drams  
 Capsicum, fine powder.... ½ dram  
 Mix.

**Powder Menthol Compound.**

Menthol (schnupfpulver).. 2 grains  
 Boric acid ..... 24 grains  
 Sugar milk ..... 24 grains  
 Mix.

**Powder Neuralgia.**

Iron peroxide ..... 8 grains  
 Cinchonidia sulphate..... 2 grains  
 Ginger, powdered ..... 4 grains  
 Licorice, powdered ..... 4 grains  
 Mix, for one powder.

**Powder Neuralgia.**

Quinine sulphate ..... 5 grains  
 Phenacetin ..... 3 grains  
 Mix.

**Powder Neuralgia and Headache.**

Quinine sulphate ..... 1 grain  
 Ammonium bromide ..... 10 grains  
 Magnesium carbonate .... 10 grains  
 Mix.

**Powder Neuralgia and Headache.**

Phenacetine .....	3 grains
Caffeine .....	1 grain
Aromatic powder .....	1 grain
Sodium bicarbonate .....	3 grains

Mix.

**Powder Opium Compound.**

Opium, powdered.....	1 grain
Black pepper, powdered...	1 grain
Ginger, powdered.....	3 grains
Caraway, powdered.....	4 grains

Mix. For one or two powders.

**Powder (Pistia) for Gout.**

Bryonia root .....	10 grams
Gentian .....	10 grams
Chamomile .....	10 grams
Colchicum root.....	20 grams
Betony .....	50 grams

This is made into 365 powders, one of which is taken each day in a full glass of cold or hot water.

**Powder Rhubarb Compound.**

Magnesia .....	½ ounce
Cream of tartar.....	½ ounce
Powdered rhubarb .....	½ ounce
Powdered chamomile .....	½ ounce
Oleo-saccharate of fennel.	½ ounce

**Powder Salicin Compound.**

Salicin .....	2 scruples
Aromatic powder .....	1 dram

Mix, and divide into 12 powders.

**Powder Salicin Compound.**

Salicin .....	15 grains
Tartar emetic .....	1 grain
Powdered sugar .....	15 grains

Mix, and divide into 10 powders.

**Powder Salicylated (with Talc).  
(Dusting Powder).**

Salicylic acid .....	3 grains
Starch .....	10 grains
Talc .....	87 grains

Mix.

**Powder, Soothing.**

Mercury with chalk.....	2 grains
Jalap, powdered .....	1 grain
Rhubarb, powdered .....	1 grain

Mix.

**Powder Talc, Salicylated.**

Salicylic acid.....	3 grains
Boric acid.....	17 grains
Talc .....	80 grains

Mix.

**Powder Teething.**

Mercury with chalk.....	1 grain
Sodium bicarbonate.....	1 grain

Mix. For one powder.

**Powder Teething.**

Mercury with chalk.....	16 grains
Calcined magnesia.....	2 grains
Oleo-saccharate of anise..	14 grains

Mix. Give from 1 to 5 grains.

**Powder Teething.**

Potassium chlorate.....	1 grain
Potassium nitrate.....	1 grain
Licorice, powdered.....	2 grains

Mix.

**Powder Teething.**

Calomel .....	1 dram
Cream tartar.....	3 drams
Ipecac .....	2 grains

Mix. Give 1 to 4 grains.

**Powders, Teething and Soothing.**

Potassium bromide.....	1 grain
Sugar of milk.....	2 grains
Licorice, powdered.....	1 grain

Mix.

**Powder Tragacanth Compound.**

Tragacanth, powdered....	1 ounce
Acacia, powdered.....	1 ounce
Starch, powdered.....	1 ounce
Sugar, powdered.....	3 ounces

Mix.

**Powder Willow Bark Compound.**

Powdered willow bark, powdered horse-chestnut bark, powdered gentian, powdered calamus, powdered avens root, equal parts.

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**MIXTURES.**

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**Mixture A. B. C.**

Potassium acetate.....	2 drams
Potassium bicarbonate....	2 drams
Potassium citrate.....	2 drams
Water, enough to make...	4 ounces

Mix.

**Mixture A. C. E.**

Alcohol .....	1 fl. ounce
Chloroform .....	2 fl. ounces
Ether .....	3 fl. ounces

Mix.

The alcohol should be 95 per cent. strength and the chemicals pure. Other proportions are used but the above is the most common one.

**Mixture Acetone.**

Acetone .....	1 dram
Tincture of opium comp...	1 ounce
Wine of antimony.....	1 ounce
Wine of tar.....	2 ounces

Mix.

**Mixture Acid Aperient.**

Magnesium sulphate.....	3 ounces
Diluted sulphuric acid....	3 drams
Extract of licorice, liquid.	3 drams
Water, enough to make...	1 pint

Mix.

**Mixture Acid Oxalic.**

Oxalic acid .....	16 grains
Syrup of orange.....	1 ounce
Water, enough to make...	4 ounces

Mix.

**Mixture Acid, Tonic.**

Nitro-muriatic acid, diluted .....	12 drops
Tincture of gentian comp..	1 dram
Syrup of orange.....	1 dram
Water, enough to make...	1 ounce

Mix.

**Mixture Agrimony Compound.**

Agrimony .....	½ ounce
Bearberry .....	½ ounce
Dandelion .....	½ ounce
Chamomile .....	½ ounce
Caraway .....	½ ounce
Celery seed .....	½ ounce
Rhubarb .....	½ ounce
Glycerin .....	2 ounces
Water, enough to make...	1 pint

Bruse the drugs and infuse in hot water (1 pint) for 2 hours, express, add the glycerin and enough water to make 1 pint.

**Mixture Alba (White Mixture).**

Magnesium sulphate.....	4 drams
Magnesium carbonate.....	1½ drams
Peppermint water, enough to make .....	6 ounces

Mix.



**Mixture Alkaline.**

Potassium nitrate ..... 5 grains  
 Potassium bicarbonate .... 20 grains  
 Syrup of orange..... 2 drams  
 Water, enough to make... 1 ounce  
 Mix.

**Mixture Antidysentery (Hope's Camphor Mixture).**

Nitric acid ..... 2 drams  
 Tincture of opium..... 80 grains  
 Camphor water, enough to make ..... 1 pint  
 Mix.

**Mixture Antiasthmatic.**

Ammonium iodide ..... 4 drams  
 Ammonium bromide ..... 6 drams  
 Tincture of lobelia..... 10 ounces  
 Syrup of tolu, enough to make ..... 1 pint  
 Mix. Dose, 1 teaspoonful.

**Mixture Antiasthmatic.**

Apomorphine hydrochloride 4 grains  
 Diluted hydrochloric acid. 3 drams  
 Morphine hydrochloride... 2 grains  
 Syrup of tolu..... 2 ounces  
 Chloroform water, enough to make..... 1 pint  
 Mix.

**Mixture Begbie.**

Acid hydrocyanic, dilute.. 30 minims  
 Nitric acid, dilute..... 3 drams  
 Glycerin ..... 1 ounce  
 Infusion of quassia, enough to make..... 6 ounces  
 Mix.

**Mixture Bismuth Compound.**

Bismuth and ammonium citrate ..... 5 drams  
 Chloroform ..... 32 drops  
 Tincture of nux vomica... 1 ounce  
 Diluted hydrocyanic acid. 2 drams  
 Compound tincture of cardamom ..... 1 fl. ounce  
 Water, enough to make... 8 fl. ounces  
 Dissolve the citrate in 4 ounces of water, add the other ingredients and enough water to make 8 ounces.

**Mixture Bromoform.**

Bromoform ..... 16 drops  
 Alcohol ..... 2 drams  
 Tincture of cardamom comp. .... 2 drams  
 Glycerin ..... 1½ ounces  
 Mix.

**Mixture Carminative (Mother's Friend) (Infants' Preservative).**

Oil of dill..... 8 drops  
 Aromatic spirit of ammonia ..... 1 dram  
 Magnesium carbonate ... 1 dram  
 Water ..... 4 ounces  
 Sodium bromide..... 20 grains  
 Potassium bicarbonate... 30 grains  
 Tincture of cardamom comp. .... ½ ounce  
 Syrup, enough to make... 6 ounces  
 Mix the oil and spirit, triturate with the magnesium carbonate, add the water, filter, add the other ingredients and dissolve.

**Mixture Carminative.**

Magnesium carbonate..... 80 grains  
 Aromatic spirit of ammonia ..... 1½ drams  
 Glycerin ..... ½ ounce  
 Tincture of cardamom comp. .... 3 drams  
 Lime water ..... 2 drams  
 Water, enough to make... 6 ounces  
 Mix.

**Mixture Carminative.**

Sodium bicarbonate..... 3 drams  
 Aromatic spirit of ammonia ..... 3 drams  
 Tincture of cardamom comp. .... 6 drams  
 Glycerin ..... 2 ounces  
 Dill (or anise) water, enough to make..... 1 pint  
 Mix.

**Mixture Chlorine.**

Chlorine water..... 5 ounces  
 Syrup ..... 10 ounces  
 Mix.

**Mixture Chlorine and Quinine.**

Potassium chlorate..... 40 grains  
 Hydrochloric acid..... 1 dram  
 Quinine sulphate..... 32 grains  
 Syrup of orange..... 2 ounces  
 Water, enough to make... 1 pint

Put into a pint bottle the potassium chlorate and hydrochloric acid, cork tightly and let stand half an hour, add a little warm water, cork again and let stand. Repeat this till all the water is added, then add the quinine and syrup well rubbed together, and shake.

**Mixture Chloroform.**

Chloroform ..... 40 minims  
 Oil of sweet almond..... 60 minims  
 Tragacanth, in fine powder 12 grains  
 Water, enough to make... 2 fl. ounces

Pour the chloroform into a dry bottle, and add the tragacanth, and shake, add ½ ounce of water. Shake vigorously. Then add the oil in portions, shaking after each addition, and when a perfect emulsion is formed add enough water, in portions, shaking after each addition, to make 2 fluid ounces.

**Mixture Chloroform.**

Chloroform ..... 1 ounce  
 Camphor ..... 2 drams  
 Yolks of two eggs.  
 Water, enough to make... 1 pint

Put the yolks in a mortar, add the chloroform in which the camphor is dissolved, stir briskly and gradually add the water, stirring briskly.

**Mixture Codeine Compound.**

Codeine sulphate..... 3 grains  
 Solution of atropine sulphate ..... 12 minims  
 Solution of strychnine hydrochloride ..... 1 dram  
 Syrup of tolu..... 1½ ounces  
 Acid infusion of roses, enough to make..... 6 ounces  
 Dissolve and mix.

**Mixture Conium and Iron.**

Extract of conium..... 5 drams  
 Iron carbonate..... 10 fl. drams  
 Oil of cassia ..... 24 drops  
 Oil of wintergreen ..... 20 drops  
 Alcohol ..... 2 fl. ounces  
 Syrup of tolu..... 8 fl. ounces  
 Water, enough to make... 1 pint

Dissolve the iron in 4 ounces of water, and the oils in the alcohol. Rub the extract in a mortar with some of the syrup, add the remainder, then the iron solution, constantly stirring, and finally the solution of the oils and water to make 1 pint.

**Mixture Copaiba.**

Dissolve 1½ ounces of copaiba resin in 4 drams of sweet oil of almond, with gentle heat, add ½ dram solution of potassa, and form an emulsion with 1½ ounces of muc-

lage of gum arabic, and sufficient water to make 6 ounces. Flavor with 6 drops of oil of cinnamon.

#### Mixture Copaiba.

Resin of copaiba..... 15 grains  
Compound powder of almonds..... 30 grains  
Water, sufficient to make.. 1 ounce

Rub the resin with the powder until incorporated; then add the water after the manner of forming an emulsion. A cream colored emulsion is formed having but a faint odor of copaiba, which may be removed by the addition of compound tincture of lavender. The formula is not liable to separation of the resin on standing.

#### Mixture Copaiba, Guy's Hospital.

Resin of copaiba.....180 grains  
Alcohol..... 5 drams  
Spirit of chloroform..... 1 dram  
Mucilage of acacia..... 2 ounces  
Water, enough to make.. 12 ounces

Mix the copaiba and the mucilage and make an emulsion, add water to about 11 ounces, then the alcohol and spirit and finally enough water to make 12 ounces.

#### Mixture Copaiba, Keyes'.

Potassium citrate..... 2 ounces  
Copaiba..... 2 ounces  
Fluidextract of henbane.. 3 fl. drams  
Syrup of acacia..... 6 fl. ounces  
Peppermint water, enough to make..... 1 pint

Make an emulsion of the copaiba and syrup, add gradually 4 ounces of peppermint water in which the citrate has been dissolved, then add the fluidextract and finally enough water to make 1 pint.

#### Mixture Copaiba, Keyes'.

Balsam copaiba..... 2 parts  
Spirit of juniper..... 3 parts  
Spirit of nitrous ether.... 1 part  
Mix thoroughly.

#### Mixture Copaiba, Keyes'.

Emulsion for hypodermic injection.  
Balsam copaiba..... 4 parts  
Sodium carbonate, cryst.. 2 parts  
Water, enough to make..100 parts

This emulsion is commonly diluted with 3 parts water when an intravascular injection is made. When excessive pain is present, a few drops of tincture of opium may be added.

#### Mixture Copaiba, Spackman.

Balsam copaiba..... 2 ounces  
Syrup of acacia.....1½ ounces  
Oil of cubeb..... 20 drops  
Spirit of nitrous ether... ½ ounce  
Comp. tincture of lavender 3 ounces  
Tincture of opium camph. ½ ounce  
Syrup of tolu, enough to make..... 1 pint

Mix the copaiba and the oil of cubeb and make an emulsion with the syrup of acacia. Then add slowly 7 ounces of syrup of tolu, then the other ingredients, constantly stirring, and finally enough syrup to make 1 pint.

#### Mixture Copaiba, Morton's.

Take ½ ounce each of copaiba and powdered cubeb, 2 drams each of acacia and powdered sugar, 7 fluid ounces water and ½ fluid ounce camphorated tincture of opium. Make into a mixture. Dose, a tablespoonful every 3 hours.

#### Mixture Coto.

Fluidextract of coto..... 3 drams  
Tincture of cardamom comp. .... 3 drams  
Mucilage of acacia..... 1 fl. ounce  
Syrup..... 1 fl. ounce  
Water, enough to make.. 1 pint

Mix the mucilage and syrup in 4 ounces of water, then add with continuous stirring, the mixture of the fluidextract and tincture, and finally enough water to make 1 pint.

#### Mixture Creosote.

Creosote..... 16 drops  
Spirit of juniper..... 16 drops  
Syrup..... 1 fl. ounce  
Water, enough to make.. 1 pint

Shake the creosote and spirit of juniper with 14 fluid ounces of water, add the syrup and enough water to make 1 pint.

#### Mixture, English.

Magnesium sulphate..... 3 ounces  
Diluted sulphuric acid.... 3 drams  
Distilled water, to make.. 1 pint  
Syrup..... 3 ounces

Mix and dissolve; filter if necessary.

#### Mixture Ferro-Salina.

Magnesium sulphate..... ½ ounce  
Potassium bitartrate..... 1 dram  
Iron sulphate..... 15 grains  
Water, enough to make.. 1 pint

Mix, dissolve and filter.

#### Mixture Gentian.

Gentian, bruised..... ½ ounce  
Bitter orange peel, cut... 1 dram  
Coriander, bruised..... 1 dram  
Alcohol..... 2 ounces  
Water, enough to make.. 1 pint

Macerate the drugs in the alcohol for 2 hours, add the water and macerate again for 2 hours; express and add water to make 1 pint.

#### Mixture Guaiacum.

Guaiacum resin, in powder..... ½ ounce  
Sugar of milk..... ½ ounce  
Gum arabic, in powder... ½ ounce  
Alcohol..... 5 fl. drams

Cinnamon water sufficient to make 1 pint.

Mix the guaiac, sugar and gum in a mortar with 4 ounces of water, gradually added, then add the alcohol and water enough to make 1 pint.

#### Mixture Gualac, Green.

Potassium iodide..... 3 drams  
Tincture of guaiac, ammoniated..... 2½ fl. ounces  
Water..... 3 fl. ounces  
Fluidextract of dulcamara, enough to make..... 8 fl. ounces

Dissolve the iodide of potassium in the water, add the tincture in portions and shake well together until a clear green mixture has been produced, with separation of most of the resin. Then strain and add the fluid-extract.

#### Mixture Licorice Compound.

Mix 4 fluid ounces of glycerin and 2 fluid ounces of extract of licorice, then add 2 fluid ounces of camphorated tincture of opium, 1 fluid ounce of wine of antimony, and ½ fluid ounces of spirit of nitrous ether, and finally 6½ fluid ounces of syrup. The mixture is dichromatic, appearing brown and opaque by reflected light but clear and reddish by transmitted light.

**Mixture Lobelia Compound.**

Ethereal tincture of lobelia 1 ounce  
 Spirit of chloroform..... 1 ounce  
 Wine of ipecac..... 3 drams  
 Potassium iodide..... 5 drams  
 Ammonium carbonate..... 5 drams  
 Infusion of senega, enough  
 to make ..... 1 pint  
 Dissolve and mix.

**Mixture Magnesia Calcined.**

Calcined magnesia..... 10 parts  
 Distilled water.....100 parts  
 Glycerin ..... 40 parts  
 Triturate the magnesia with the water,  
 then add the glycerin.

**Mixture Magnesium Hydrate.**

Magnesium sulphate..... 30 grams  
 Distilled water.....200 grams  
 Dissolve, filter, and to the solution, heated  
 to boiling, add sufficient solution of caustic  
 soda under constant stirring to cause a de-  
 cided alkaline reaction. Wash the precipitate  
 well with hot water upon a strainer, press it  
 and mix it with sufficient cold water to  
 make the mixture weigh 100 grams. It should  
 be preserved and dispensed in dark-colored  
 bottles. It contains 5 per cent anhydrous  
 magnesia.

**Milk of Magnesia.**

Calcined magnesia, 8 grams; white sugar,  
 50 grams; water, 40 grams; distilled orange  
 flower water, 25 grams. Triturate the mag-  
 nesia with the water, heat the mixture under  
 continuous agitation to boiling; take from the  
 fire, add the sugar under continuous stirring,  
 and when cooling down add the orange flower  
 water; finally strain with the help of a  
 spatula. This formula is similar to the N.  
 F. formula.

**Water of Magnesia.**

Magnesium sulphate..... 50 parts  
 Sodium carbonate, crys-  
 tallized ..... 60 parts  
 Distilled water, sufficient quantity.  
 Carbonic acid gas, sufficient quantity.

Dissolve the sulphate of magnesium in 100  
 parts of water and filter. Also dissolve the  
 carbonate of sodium in 100 parts of water;  
 then pour both solutions, at the same time,  
 in a thin stream, into 4,000 parts of water,  
 (which should be quite cold) until nitrate  
 tained in a capacious vessel. The resulting  
 precipitate (hydrocarbonate of magnesium) is  
 washed by decantation with distilled water  
 (which should be quite cold) until nitrate  
 of barium ceases to render it turbid. About  
 eight repetitions of the washing process are  
 required. Then mix the residue with enough  
 water to make the whole weigh 1,000 parts.  
 Next pass a stream of carbonic acid gas  
 through the liquid (contained in a suitable  
 vessel), until the precipitated salt is dis-  
 solved, and transfer the solution into bottles  
 holding about 6 or 7 ounces, which should  
 be stored in a cool place, lying on their sides.

**Mixture Oleo-balsamic.**

Oil of lavender ..... 20 minims  
 Oil of marjoram ..... 20 minims  
 Oil of cloves ..... 20 minims  
 Oil of mace ..... 20 minims  
 Oil of cinnamon ..... 20 minims  
 Oil of cedrat ..... 20 minims  
 Oil of rue ..... 10 drops  
 Balsam of peru..... 30 grains  
 Alcohol ..... 10 fl. ounces  
 Macerate in a cold place and filter.

**Mixture Oleo-balsamic.**

Oil of lavender ..... 30 minims  
 Oil of cloves ..... 25 minims  
 Oil of cinnamon ..... 25 minims  
 Oil of thyme ..... 30 minims  
 Oil of lemon ..... 30 minims  
 Oil of mace ..... 30 minims  
 Oil of orange flowers..... 30 minims  
 Balsam of peru..... 80 minims  
 Alcohol, enough to make.. 16 fl. ounces  
 Dissolve the oils and balsam in the alco-  
 hol, let the solution stand for a few days  
 and filter.

**Mixture Quinine and Coffee.**

Strong infusion of coffee.. 5 fl. ounces  
 Quinine sulphate ..... 24 grains  
 Sugar ..... 4 drams

**Mixture Quinine and Iron.**

Tincture of iron chloride.. 6 drams  
 Quinine sulphate..... 16 grains  
 Chloroform water, enough  
 to make ..... 1 pint  
 Mix and dissolve.

**Mixture Rhubarb, Ammoniated.**

Powdered rhubarb.....128 grains  
 Ammonium carbonate..... 64 grains  
 Infusion of quassia..... 8 ounces  
 Peppermint water..... 8 ounces  
 Mix and dissolve.

**Mixture Senna Compound.**

Senna leaves, bruised... 2 ounces  
 Cloves, bruised..... 2 drams  
 Extract of licorice, cut in  
 thin slices.....3½ ounces  
 Water ..... 2 pints  
 Macerate in a covered vessel for 12 hours,  
 occasionally stirring the mixture in the  
 meantime; then strain and add

Magnesium sulphate..... 10 ounces  
 Syrup of buckthorn..... 1 ounce  
 Compound spirit of am-  
 monia ..... ½ ounce  
 Compound tincture of sen-  
 na ..... 2 ounces

**Mixture Sodium and Gentian.**

Sodium bicarbonate..... 10 grains  
 Tincture of cardamom  
 comp. .... ½ fl. dram  
 Infusion of gentian,  
 enough to make..... 1 ounce  
 Mix; for one dose.

**Mixture Sodium and Magnesium.**

Sodium bicarbonate..... 5 drams  
 Magnesium carbonate,  
 heavy ..... 5 drams  
 Spirit of chloroform..... 2 fl. drams  
 Spirit of ammonia, aro-  
 matic ..... ½ fl. ounce  
 Caraway water, enough to  
 make ..... 1 pint  
 Mix. Shake before taking.

**Mixture Tonic.**

Quinine sulphate ..... 1 dram  
 Strychnine sulphate ..... 2 grains  
 Potassium citrate ..... 6 drams  
 Tincture of ferric chloride 2 fl. ounces  
 Syrup ..... 4 fl. ounces  
 Water, enough to make.. 1 pint  
 Dissolve the quinine in the tincture of iron,  
 and the strychnine and potassium citrate in  
 8 fluid ounces of water. Mix and add the  
 syrup and water. Dose: One or two tea-  
 spoonfuls.



**Mixture Sodium and Magnesium, Modified.**

Mixture of sodium and  
magnesium ..... 1 ounce  
Diluted hydrocyanic acid. 3 drops

Mix. A teaspoonful of this mixture is used in England as a "Pick-me-up."

**Mixture Spermatorrhoea (Dr. Hargreave).**

Potassium bromide ..... 1 ounce  
Tincture of gelsemium....  $\frac{1}{2}$  fl. ounce  
Fluidextract of ergot ....  $\frac{1}{2}$  fl. ounce  
Tincture of belladonna.... 3 drams  
Syrup of ginger..... 1 ounce  
Water, enough to make... 1 pint

Mix. A tablespoonful twice daily and at bedtime.

**Mixture Taraxacum and Podophyllin.**

Podophyllin ..... 16 grains  
Aromatic spirit of ammonia ..... 2 fl. ounces  
Juice of taraxacum..... 4 ounces  
Tincture of ginger.....  $\frac{1}{2}$  fl. ounce  
Water, enough to make... 1 pint

Dissolve the podophyllin in the spirit, and add the other ingredients. Dose: 1 to 4 teaspoonfuls.

**Mixture Turpentine.**

Turpentine ..... 5 drams  
Ether ..... 4 drams  
Syrup orange ..... 4 ounces  
Simple syrup ..... 6 ounces  
Water, to make..... 1 pint

Mix.

**LINIMENTS.****Liniment A. B. C. (Aconite, Belladonna, Chloroform)**

Camphor .....  $\frac{1}{2}$  ounce  
Chloroform ..... 3 fl. ounces  
Liniment of aconite..... 5 fl. ounces  
Liniment of belladonna.... 5 fl. ounces  
Glycerin, enough to make. 1 pint

Dissolve the camphor in the chloroform and add the other ingredients.

**Liniment A. B. C. (Ordinary).**

Liniment of aconite ..... 1 ounce  
Liniment of belladonna .. 1 ounce  
Liniment of chloroform .. 1 ounce

Mix.

**Liniment Acid Carbolic.**

Dissolve carbolic acid, 1 part, in olive oil, 100 parts.

**Liniment Aeruginis.**

Verdigris (powdered)..... 5 drams  
Vinegar ..... 5 fl. ounces  
Clarified honey, enough to make ..... 1 pint

Dissolve the verdigris in the vinegar, strain, mix the honey and boil for half an hour.

**Liniment Ammonium Iodide.**

Water of ammonia..... 3 fl. ounces  
Glycerin (or soap liniment) 2 fl. ounces  
Tincture of iodine..... 8 fl. ounces  
Alcohol, quantity sufficient.

Mix the soap liniment (or glycerin) with the tincture of iodine and 4 fluid ounces or alcohol and the ammonia water; shake, and make to 1 pint with alcohol.

**Liniment Ammonium Iodide.**

Stronger ammonia water.. 4 fl. ounces  
Tincture of iodine..... 4 fl. ounces  
Glycerin ..... 4 fl. ounces  
Spirit of camphor..... 4 fl. ounces

Mix the ammonia water and tincture, add the spirit and glycerin. Filter if necessary.

**Liniment Ammonium Iodide.**

Ammonium iodide ..... 2 drams  
Camphor,  
Oil of lavender, of each.. 1 dram  
Water of ammonia..... 4 ounces  
Alcohol, enough to make.. 1 pint

**Liniment Arnica.**

Arnica flowers ..... 6 ounces  
Tobacco leaves ..... 1 ounce  
Soap liniment, enough to make ..... 1 pint

Macerate the arnica and tobacco in 1 pint of soap liniment for six days, express and add soap liniment to make 1 pint.

**Liniment Birch Compound (Liniment Betula Compound).**

Menthol ..... 1 ounce  
Oil of eucalyptus..... 2 ounces  
Oil of camphor..... 5 ounces  
Methyl salicylate, enough to make ..... 1 pint

Mix.

**Liniment, Black.**

Alcohol ..... 4 ounces  
Tincture of arnica..... 4 ounces  
Oil of tar..... 4 ounces  
Olive oil..... 4 ounces  
Sulphuric acid..... 1 ounce

Mix the first four ingredients, and add with great caution and constant stirring the acid.

**Liniment Capsicum.**

Tincture of capsicum..... 5 fl. ounces  
Oleic acid..... 2 fl. ounces  
Oil of lavender..... 1 dram  
Alcohol, enough to make.. 1 pint

Mix.

**Liniment Capsicum Compound.**

Tincture of capsicum..... 8 fl. ounces  
Camphor .....  $\frac{1}{2}$  ounce  
Oil of rosemary ..... 1 dram  
Oil of lavender ..... 1 dram  
Oil of thyme ..... 1 dram  
Oil of cloves ..... 1 dram  
Oil of cinnamon ..... 12 drops  
Water of ammonia..... 4 fl. ounces  
Powdered castile soap....  $\frac{1}{2}$  dram  
Burnt sugar..... 1 dram  
Water, enough to make... 1 pint

Dissolve the camphor and oils in the tincture, and mix this with the water of ammonia. Then dissolve the soap and sugar in the water, and mix the whole together.

**Liniment, Household.**

Liniment of ammonia..... 4 fl. ounces  
Oil of turpentine.....  $\frac{1}{2}$  fl. ounces  
Tincture of capsicum..... 1 fl. ounce  
Water, enough to make... 1 pint

Mix.

**Oil Hyoscyamus Compound (Balsamum Tranquillans).**

Oil wormwood,  
Oil lavender,  
Oil rosemary,  
Oil sage,  
Oil thyme, of each..... 2 drams  
Oil hyoscyamus, infused,  
enough to make ..... 1 pint

Mix.

**Liniment Kerosene.**

Kerosene .....	5 fl. ounces
Tincture of opium .....	1½ fl. ounces
Tincture of arnica .....	1½ fl. ounces
Tincture of stramonium .....	1½ fl. ounces
Spirit of ammonia, aromatic .....	2 fl. ounces
Oil of origanum .....	1½ fl. ounces
Chloroform .....	1½ fl. ounces
Alcohol, enough to make..	1 pint

Mix.

**Liniment Krampf (Cramp's Liniment).**

Tincture of opium,	
Spirit of ammonia,	
Hoffman's balsam of life,	
(Tincture benzoin co.)	
of each .....	1½ fl. ounces
Infused oil of hyoscyamus,	
enough to make.....	1 pint

**Liniment Menthol.**

Menthol .....	3 ounces
Chloroform .....	4 fl. ounces
Alcohol, enough to make..	1 pint

Dissolve the menthol in the chloroform and add alcohol to make 1 pint.

**Liniment Menthol.**

Menthol .....	3 ounces
Chloroform .....	4 ounces
Olive oil, enough to make.	1 pint

Dissolve the menthol in the chloroform and add oil enough to make 1 pint.

**Liniment Menthol Compound.**

Menthol .....	1 dram
Tincture of arnica.....	8 fl. ounces
Liniment soap.....	8 fl. ounces

Mix.

**Linimentum Naphthol.**

Dissolve 75 grains of naphthol in 1 pint of a fat oil like almond, olive or cod liver oil.

**Liniment Opium, Ammoniated.**

Tincture of opium.....	5 fl. ounces
Liniment of belladonna..	1 fl. ounce
Stronger water of ammonia .....	1 fl. ounce
Soap liniment, enough to make .....	1 pint

Mix. Let stand a week and filter.

**Liniment Potassium Iodide.**

Soft soap.....	2 ounces
Potassium iodide.....	1½ ounces
Glycerin .....	1½ ounces
Oil of lemon.....	1 dram
Diluted alcohol (50%), enough to make.....	1 pint

Dissolve the soap in a mixture of the glycerin, oil, and 12 ounces of diluted alcohol; add the potassium iodide, let stand a few days, filter and add enough diluted alcohol to make 1 pint.

**Liniment Potassium Iodide.**

Hard soap, cut small.....	2 ounces
Potassium iodide.....	2 ounces
Glycerin .....	1 fl. ounce
Oil of lemon .....	1 fl. dram
Distilled water, enough to make .....	1 pint

Dissolve the soap in 7 ounces, and the glycerin and iodide in 2 ounces of water, mix the solutions, and add the oil of lemon, shake, filter and add enough water to make 1 pint.

**Liniment Opium, Ammoniated.**

Opium .....	2 ounces
Powdered soap.....	1 ounce
Ammonia water, strong....	1 fl. ounce
Spirit of camphor, enough to make .....	1 pint

Macerate for one week, shaking frequently, and filter.

**Liniment Soap Ammoniacal.**

Soap, in shavings.....	1 ounce
Water .....	9 ounces
Alcohol .....	3 ounces
Water of ammonia.....	4 ounces

Digest the soap with the water until dissolved; then add the alcohol and ammonia.

**Liniment Stillingia.**

Oil of stillingia .....	4 fl. ounces
Oil of cajuput .....	2 fl. ounces
Oil of lobelia .....	1 fl. ounce
Alcohol .....	9 fl. ounces

Mix.

**Liniment Tar.**

Oil of tar .....	6 fl. ounces
Oil of birch tar.....	6 fl. ounces
Olive oil .....	2 fl. ounces
Alcohol .....	2 fl. ounces

Mix.

**Liniment White.**

Under this name, which is very popular in England, a great number of liniments are sold. The formulas range from a plain mixture of ammonia water and olive oil to very complex mixtures resembling the acetic turpentine liniment of the National Formulary (Stokes' Liniment). Most of them are emulsions of turpentine and eggs, to which acetic acid and aromatic oils or waters are added. If no formula is given, "Stokes' Liniment" may safely be dispensed.

**Thio Opodeloc.**

Seventy parts dialyzed stearin soap and 20 parts dialyzed olein soap are dissolved with heat in 850 parts alcohol (90 per cent), 20 parts oil of lavender added, filtered, and the filtrate diluted to 900 parts by addition of alcohol. Mix in a warm capsule 50 parts each of liquid thiol and distilled water, pour this slowly into the soap solution, add 25 parts ether, and pour into containers.

**Chloral with Camphor.**

Rub together 1 ounce each of camphor and hydrate of chloral in a warm mortar until completely liquefied.

**Chloral Camphor Cantharidated.**

Forty parts camphor are powdered with a few drops alcohol and mixed with 60 parts of chloral hydrate; 20 parts of powdered cantharides are heated for 1 hour in a water bath at 140° F. with the chloral camphor, shaking once in a while, and the mixture is strained through cloth. It is best applied by slightly moistening a piece of linen or cotton and keeping it in contact with the skin with strips of adhesive plaster.

## GAUZES, COTTONS, COLLODIONS.

**Cottons.**

Antiseptic cottons are made by dipping pure cotton in solutions of various antiseptics, such as boric acid, corrosive sublimate, etc., drying and folding. While most of this work re-

quires special training and machinery, a few formulas are given as guides, in case antiseptic cottons of special kinds are ordered.

#### Cotton Absorbent.

One kilogram cotton is boiled for half an hour in 4 liters of water, containing 25 grams caustic potassa, and then well washed till every trace of alkali has been removed. It is squeezed quite dry and put for 15 to 20 minutes in a 5 per cent solution of chlorinated lime. After washing with a little water (not too much), the cotton is dipped into water acidulated with muriatic acid (about 30 grams diluted muriatic acid to 4 liters of water), rinsed in fresh water, and boiled again in alkaline water of the above mentioned strength. After washing it is dipped into the acid solution, and rinsed perfectly.

#### Cotton Acid Boric.

Dip absorbent cotton in a solution of required strength of boric acid and dry. A pound of cotton requires about 2 pints of the solution.

#### Cotton Analgesic.

Solution of cocaine (3 per cent) .....	1 ounce
Morphine sulphate.....	2 drams
Absorbent cotton.....	1 ounce

Dissolve the morphine in the cocaine solution and soak the cotton in the solution.

#### Cotton Salicylated.

Glycerin .....	2 parts
Water .....	100 parts
Alcohol .....	20 parts
Salicylic acid .....	2 parts
Absorbent cotton .....	20 parts

Dissolve the salicylic acid in the alcohol, add the water and glycerin, saturate the cotton in the mixture and dry.

#### Cotton Sublimated.

Mercuric chloride .....	35 grains
Ammonium chloride .....	35 grains
Alcohol .....	1 pint
Boiled water .....	4 pints
Absorbent cotton.....	1 pound av.

Dissolve the sublimate in the alcohol, add the boiled water, containing the ammonium chloride, immerse the cotton, kneading thoroughly, so as to have the antiseptic solution uniformly distributed through it, and so that none of the liquid be left. Dry. It contains one-half of 1 per cent of mercuric chloride.

#### Canton Flannel Absorbent.

Boil the canton flannel  $1\frac{1}{2}$  to 2 hours in a 3 per cent solution of caustic soda, then wash in several portions of pure water, treat 10 or 15 minutes with water containing  $1\frac{1}{2}$  per cent of hydrochloric acid, to remove any remaining soda, and finally wash repeatedly in abundance of pure water.

#### Gut Antiseptic.

Macerate commercial gut in stronger ether for 24 hours. Remove, place in a 1,000 mercuric chloride solution, one-fifth part, by weight of which is alcohol, the rest water, and macerate for 30 minutes; remove, cut into pieces of three or six feet each, dry and place in oil of juniper, to macerate for ten days, after which time it is ready for use, or may be kept indefinitely. To use, remove, wipe off adhering oil with an antiseptic towel, or, better, wash with benzine, dry and keep in a 1-1,000 mercuric chloride solution.

#### Catgut Chromicized.

Place the catgut in ether for 48 hours; then immerse in the following for 48 hours and put in antiseptic, dry, tight-closed vessels:

Chromic acid.....	1 grain
Carbolic acid.....	200 grains
Alcohol .....	2 drams
Distilled water.....	22 drams

Soak in carbolic, 1-20, before using.

#### Gauzes.

The remarks on cotton apply equally to gauzes. The latter are generally pressed in suitable presses before drying.

#### Gauze Antiseptic.

Two hundred parts of Burgundy pitch and 100 parts of stearin are dissolved in 2,000 parts of alcohol, and 180 parts of carbolic acid added. This quantity, in grams, is sufficient to impregnate 80 meters (87 yards) of gauze. The latter is first laid into square piles, pressed into a zinc trough, heated for several hours in a steam bath, and then impregnated with the mixture. After having remained a few hours longer in the warm trough, it is pressed. A few minutes' exposure to the air is sufficient to dry it enough to enable it to be rolled and wrapped in parchment paper.

#### Gauze, Boric Acid 10%.

Boric acid.....	9 drams
Boiling water.....	13 ounces

Dissolve, and to the solution add Gauze, antiseptic..... 10 ounces

When equally distributed, press, until the gauze weighs 15 ounces, then dry.

#### Gauze Iodoform.

Ether .....	22 ounces
Rectified benzine.....	16 ounces
Sterilized vaseline oil.....	2½ drams
Elemi resin.....	75 grains
Iodoform .....	12½ drams
Gauze .....	25 drams

Mix the liquids, and in the mixture dissolve the elemi; strain or filter, and in the clear liquid dissolve the iodoform by agitation.

Then dip the gauze in the solution, hang on antiseptic clotheslines and dry.

#### Gauze Iodoform.

Iodoform .....	5 ounces av.
Petroleum benzene.....	18 pints
Purified gauze.....	10 ounces av.

(about 54 yds.)

Dissolve the iodoform in the benzine, then saturate the gauze with the benzine solution. When dry, moisten with a mixture of alcohol (2 parts) and glycerin (1 part); cut it into 3-yard pieces. After the alcohol has largely evaporated, wrap in paraffin paper with antiseptically clean hands, and keep in a closed container, having in it an open salt-mouth bottle containing water (to keep it moist). The finished product contains 5 per cent of iodoform.

#### Gauze Iodol.

Iodol .....	1 ounce
Rosin .....	1 ounce
Glycerin .....	1 ounce
Alcohol .....	10 ounces
Gauze .....	10 ounces

Dissolve the iodol and rosin in the alcohol, strain, add the glycerin and proceed as with iodoform gauze.



**Gauze Sublimated.**

Mercuric chloride.....	21½ grains
Ammonium chloride.....	21½ grains
Boiled water.....	6 pints
Purified gauze.....	100 ounces av.
(about 54 yds.).	

Dissolve the chlorides in the water, immerse the gauze, previously cut into pieces of 3 yards ("short") or 6 yards ("long"), each, in length. Express moderately, or so that no liquid shall be left. Dry in a clean, dry room, upon an antiseptic clothesline. Remove, wrap in paraffin paper, and keep in a well closed container. The product contains one-twentieth of one per cent of mercuric chloride.

**Collodion Acetone (Liquid Court Plaster).**

Pyroxylin.....	6 drams
Camphor.....	1½ drams
Pure acetone, enough to make.....	1 pint

Dissolve the pyroxylin and camphor in 12 ounces of pure acetone in a sterilized bottle and add enough acetone to make 1 pint.

**Collodion Arnica.**

Arnica, in powder.....	4 ounces
Ether.....	12 fl. ounces
Pyroxylin.....	128 grains
Alcohol, enough to make.....	1 pint

Mix the ether with 4 ounces of alcohol, moisten the arnica with this mixture, pack in a covered percolator; after six hours percolate, adding enough alcohol through the percolator, until 1 pint is obtained. In this dissolve the pyroxylin.

**Collodion Callosam (Corn Paint).**

Salicylic acid.....	40 grains
Fluidextract of cannabis indica.....	1 dram
Alcohol.....	1 dram
Collodion, enough to make.....	1 pint

Dissolve the acid in a mixture of the fluid-extract and alcohol; add the collodion. Keep in well stoppered bottle.

**Collodion Callosam (Corn Paint).**

Salicylic acid.....	40 grains
Fluidextract of cannabis indica.....	1 dram
Aceton collodion.....	7 drams
Mix.	

**Collodion Cantharidal, Improved.**

Cantharidin.....	1 part
Castor oil.....	40 parts
Acetone.....	40 parts
Strongest collodion.....	900 parts

Rub up the cantharidin in the oil, heating carefully to hasten solution. Let cool, and add the acetone, and finally incorporate the collodion. If desired the preparation may be colored by the addition of 10 parts tincture of hemp.

**Collodion Cantharidal.**

Pyroxylin.....	5 drams
Ether.....	12 ounces
Alcohol.....	3 ounces
Castor oil.....	3 drams
Cantharidin.....	½ dram

Dissolve the cantharidin in the mixture of alcohol and oil, and the pyroxylin in the ether. Mix the two solutions.

**Collodium Capsicum.**

Prepare in the same manner as arnica collodion, substituting 2 ounces of capsicum in powder for the arnica.

**Collodion Corrosive Sublimate.**

Corrosive sublimate.....	1 dram
Collodion.....	1 fl. ounce
Palm oil.....	10 grains

Mix the collodion and the palm oil and dissolve in it the corrosive sublimate.

**Collodion Morphine.**

Morphine alkaloid.....	1 dram
Collodion.....	20 drams

Dissolve the morphine in the collodion.

**Collodion Styptic, Parosi.**

Tannic acid.....	5 drams
Benzoic acid.....	3 drams
Phenol.....	1 ounce
Collodion.....	14 fl. ounces

Dissolve the phenol and benzoic acid in 7 ounces of collodion, and the tannic acid in the other 7 ounces. Mix.

**DIGESTIVE FERMENTS.****Pepsin.**

The stomachs are macerated with acidulated water, the solution resulting is clarified by addition of sulphurous acid, the clear liquid removed from the precipitate, the pepsin separated from the peptone by saturating at a higher temperature with sodium sulphate, the pepsin being deposited and the peptone remaining dissolved. The precipitated pepsin is dissolved in weak hydrochloric acid and sodium sulphate, is removed from the solution by dialysis, and the residual liquid concentrated and dried. From the liquid out of which the pepsin is deposited the sodium sulphate is separated from the peptone by recrystallization on cooling. The product is readily soluble, free from peptone, non-hygroscopic, permanent, and one grain capable of dissolving 10,000 grains of egg albumen.

**Pepsin.**

Take fresh rennets (stomachs) of hogs, calves, sheep or cattle; clean with cold water, macerate from 50 to 60 hours in water well acidulated with hydrochloric acid, at a temperature not exceeding 50° F. Remove the rennets from the solution, strain solution through cotton flannel, add common salt in the proportion of about 1½ pounds to the gallon of solution, mix, allow to rest fifteen to thirty minutes. Draw off the clear liquid and throw the scum formed upon cotton strainers and drain. Next dissolve the scum in the smallest quantity of water acidulated with hydrochloric acid, filter, add two pints alcohol to every pint of pepsin solution. When a precipitate has formed throw the whole upon white filtering paper, allow to drain, washing repeatedly with diluted alcohol and dry the mass in a cool dry place—free from dust and vapor. The dried mass can easily be passed through a fine brass sieve.

**Cordial Pepsin.**

Pepsin.....	2 drams
Diluted hydrochloric acid.....	4 drams
Simple syrup.....	8 ounces
Sherry wine.....	4 ounces
Water, sufficient to make.....	1 pint

Mix the pepsin with the wine and acid. Allow to stand until dissolved, add the syrup and 3 ounces of water, filter and add enough water to make 1 pint.

**Pepsin Liquid Aromatic.**

Saccharated pepsin.....	320 grains
Oil of cinnamon .....	2 minims
Oil of pimenta .....	2 minims
Oil of cloves .....	4 minims
Hydrochloric acid.....	75 minims
Alcohol .....	½ ounce
Glycerin .....	6 ounces
Water, a sufficient quantity to make.....	16 ounces

Dissolve the oils in the alcohol, triturate this with the pepsin in a mortar, and gradually add the acid, glycerin and water.

**Elixir Pepsin Compound.**

Wine pepsin.....	10 ounces
Aromatic tincture.....	3 drams
Bitter tincture.....	½ fl. ounce
Vinous tincture of rhubarb	1 fl. ounce
Syrup of orange peel, enough to make.....	1 pint

Mix and filter.

**Essence Pepsin.**

Pepsin (scales).....	120 grains
Glycerin .....	1 fl. ounce
Elixir of taraxacum compound .....	1 fl. ounce
Alcohol .....	2 fl. ounces
Oil of cloves .....	1 drop
Dilute hydrochloric acid.....	1 fl. dram
Water, enough to make...	16 fl. ounces

Powder the pepsin in a mortar, add the glycerin, elixir and the diluted acid, let stand 4 hours. Dissolve the oil of cloves in the alcohol, add to the pepsin solution, mix and add the other ingredients. Filter after 3 days.

**Essence Pepsin.**

Scale (or granulated) pepsin .....	1 ounce
Cinnamon water .....	2 fl. ounces
Caraway water .....	4 fl. ounces
Hydrochloric acid.....	1 fl. dram
Elixir of calisaya.....	2 fl. ounces
Glycerin .....	16 fl. ounces
Distilled water, enough to make .....	4 pints

Dissolve the pepsin in the waters previously mixed with the hydrochloric acid, add the elixir of calisaya, allow to stand 24 hours, then filter, add glycerin, and lastly sufficient distilled water to bring the bulk up to ½ gallon.

**Essence Pepsin.**

Pepsin .....	128 grains
Glycerin .....	4 ounces
Hydrochloric acid dilute..	75 minims
Alcohol .....	3 ounces
Water, enough to make...	1 pint

Mix the pepsin with 4 ounces of water and the acid, let stand 4 hours, add the other ingredients and filter.

This is a good general formula, which may be altered to suit, by taking aromatic waters instead of plain waters, or aromatic tinctures (orange, cardamom, orris root, etc.) in place of the alcohol.

**Wine Pepsin.**

Pepsin .....	3 drams
Water .....	3 drams
Diluted hydrochloric acid..	1½ drams
Tincture of orange.....	½ fl. ounce
Sherry wine, enough to make .....	1 pint

Mix the pepsin with the water, acid and tincture. After 4 hours add the wine. After 3 days filter.

**Essence Pepsin Phenolated.**

Phenol, pure.....	10 grains
Essence of pepsin.....	1 pint

Dissolve the phenol in the elixir.

**Wine Pepsin, Aromatic.**

Aromatic tincture.....	2 drams
Wine of pepsin.....	1 pint

Mix and filter.

**Wine Pepsin, Aromatic.**

Various aromatics can be used to flavor the wine. Aromatic oils (10 to 20 drops to a pint) are dissolved in ½ ounce of alcohol and added to a pint of the wine of pepsin. Filter after 24 hours.

**Pancreas Extract Aqueous.**

Aqueous pancreas extract is prepared from the freshly prepared parts by adding ½ pint of water warmed to 36° C. (86° F.), for every pancreas, together with a little common salt, and setting aside for 5 or 6 hours, when the mixture is drained on a hair sieve without pressure. The liquid also must be used fresh, and, while less active than paste, is in some cases preferable.

**Pancreas, Powdered.**

Powdered pancreas is readily obtained by reducing the paste in a vacuum apparatus at a temperature of 40° C. (104° F.) to an extract, treating this about 48 hours with absolute alcohol, allowing the latter to drain off, and evaporating the adhering portion at a temperature not exceeding 40° C. The light brown coarse powder so obtained is very hygroscopic, and must, therefore, be carefully preserved from dampness. It may be administered in wafers, or in food or water.

Since pancreatic ferments become inert when exposed to a temperature exceeding 45° C. (113° F.), the particular food to which any of the above preparations are to be added must have a temperature below that named. When the powder acquires a dark color it should not be used.

**Elixir Pancreatin.**

Pancreas .....	No. 6
Hydrochloric acid.....	4 fl. ounces
Glycerin .....	q. s.
Water .....	1½ gallons

Macerate the dissected pancreas three days in a mixture of the water, the acid, and 2½ pints of glycerin; then separate the liquid, strain, and add 2½ fluid drams of oil of orange and a sufficient quantity of glycerin to make the liquor measure 2½ gallons; it is then filtered and forms a sweet acidulous liquid, 1 fluid dram of which will readily emulsify half a fluid ounce of cod liver oil.

**Solution Pancreatic.**

Pancreatin .....	600 grains
Glycerin .....	6 fl. ounces
Orange flower water.....	10 fl. ounces

Filter.

**Liquid Rennet.**

Well-dried rennets—preferably 3 months old—are cut into shreds, rejecting the smooth portions. To 100 grams of the shredded rennet use 1 liter of water; 50 grams common salt, and 40 grams boracic acid, and shake frequently for several days, keeping it at the ordinary temperature; 50 grams more of the salt are then added, and the mixture thrown upon a large filter, about 1 liter passing through a double filter, the full size of the sheet, in two days. For 1 liter of

water used, about 800 cubic centimeters of liquid rennet is thus obtainable, which, when brought to the measure of 1,000 cubic centimeters, with a 20 per cent solution of common salt (1 liter), will be of such strength that 1 part will coagulate 10,000 parts of milk, and will keep well. The filters becoming stopped up rapidly, they cannot be used for the filtration of more than 1½ liters. The small quantity of boracic acid introduced into the milk does not in any way interfere with the manufacture of cheese. Alcohol may be substituted for boracic acid, but, in this event, the liquid rennet must be kept in well-closed bottles. The rennets are extracted with a 10 per cent solution of common salt, in the manner above stated; after five days, 9 per cent (by volume) of alcohol is added, and the liquid filtered. The preparation keeps in well-closed bottles for a long time and has about the same strength (i. e. 1:10,000) as that prepared with boracic acid.

#### Essence Rennet.

Take one calf's stomach, cut into 20 pieces, and rub with 6 ounces of salt. Let it stand over night, then digest in 36 ounces of water for at least one week, then strain, and to the strained liquor add the following:

Oil of pimenta .....	12 drops
Oil of bitter almond.....	12 drops
Oil of nutmeg .....	12 drops
Oil of cloves .....	12 drops
Oil of lemon .....	12 drops
Rectified spirit.....	4 ounces

Filter through lampblack.

This essence has kept good for three years. A tablespoonful of it is sufficient for a quart of junket.

#### Essence Rennet.

One rennet .....	
Sodium chloride.....	4 ounces
Alcohol .....	4 ounces
Glycerin .....	2 ounces
Syrup lactic acid.....	1 dram
Chloroform .....	10 drops
Water .....	2 pints

Chop the rennet small, macerate in the mixed liquids for 4 days, decant and filter. The resulting essence should measure 2½ pints.

#### Essence Rennet, Aromatic.

Mixtures of aromatic oils may be used as aromatics, such as oil of pimenta, bitter almond, cloves, nutmeg and lemon, taken a mixture of 4 drops of each to a pint of the plain rennet.

#### Diastase.

Macerate 10 pounds of ground pale malt, 350 grains of bicarbonate of sodium and 12 to 14 pints of water for two hours at 104° F., draw off the fluid, add 6 to 8 pints more of water, draw off the second fluid after a time, unite the 2 fluids; heat to 149° F., and strain while hot. To this fluid add twice its volume of strong alcohol, allow the precipitate to subside, draw off the supernatant fluid, re-dissolve the precipitate in a little warm distilled water, and, after filtering or straining, reprecipitate with alcohol. The diastase thus purified is dried on a plate at 122° F., and powdered. The yield is 1 to 1½ per cent. It is important to remove the impurities (matter insoluble or sparingly soluble in water) as speedily as possible, since they consist of very putrescible substances.

#### Diastase.

Two pounds of the best malt are allowed to stand soaked in 10 per cent alcohol for eight hours, after which time it is pressed and filtered. The perfectly bright filtrate is then precipitated by alcohol till a milkiness

ensues. It is then allowed to stand some time, decanted or filtered, and the precipitate washed once or twice with absolute alcohol. The precipitate is then treated with cold water, filtered from the insoluble matter, and reprecipitated by alcohol. By repeating this treatment once or twice, and drying over phosphoric acid in vacuo, a white, easily soluble powder of high activity is produced.

## TROCHES, LOZENGES, PASTILLES, TABLETS.

#### Troches, Acid.

Granulated sugar.....	3 pounds
Water .....	1 pint
Cream tartar.....	2 drams
Tartaric acid.....	1 ounce
Oil of lemon.....	20 drops

Boil sugar and water, add cream tartar, boiling to the degree of "crack." Pour on a slab, work in the acid and lemon, when cool enough, knead well and cut into "drops" or troches.

#### Troches Cocaine.

Cocaine hydrochloride.....	10 grains
Vanillin .....	2 grains
Powdered tragacanth.....	20 grains
Pure sugar.....	4 troy ounces
Alcohol .....	15 minims
Water .....	3 fl. drams

Divide into 128 troches.

#### Troches Cubeb.

Cubeb, in powder.....	200 grains
Extract of licorice.....	1,225 grains
Tragacanth, in powder.....	70 grains
Refined sugar.....	200 grains
Black currant paste, a sufficiency.	

Prepare and divide into 350 lozenges. (Said to closely resemble Brown's.)

#### Troches Hydrastin.

Eucalyptol .....	30 minims
Oil of cubeb.....	30 minims
Hydrastin .....	30 grains
Cocaine hydrochloride.....	5 grains
Powdered sugar.....	1 ounce
Powdered extract of lico- rice .....	2 ounces
Powdered tragacanth.....	200 grains
Syrup tolu, enough to make a mass, which form into 100 troches.	

#### Troches Pepsin.

Pepsin .....	150 grains
Sugar .....	3 ounces
Tragacanth .....	45 grains
Glycerin .....	1 dram
Water, quantity sufficient.	
Make into 100 troches.	

#### Troches Potassium Chlorate.

Potassium chlorate.....	4 pounds
Powdered sugar.....	16 pounds
Vanillin .....	16 grains
Mucilage of acacia, quantity sufficient.	

Make a mass and divide into lozenges of 25 grains each. The mass remains beautifully white and has a prominent and agreeable taste of vanilla.

Troches of potassium chlorate are often ordered with other flavors. Aromatic oils, as cinnamon, wintergreen, orange, lemon, cloves, etc., may be substituted in the above formula for vanillin.



**Lozenges.**

Lozenges are generally made by dissolving a quantity of sugar in half its weight of water by heat and boiling down to a certain consistency. Then the medicament is added and boiling continued for a short time. Then the thick syrup is poured on a clean slab and allowed to cool, when it is cut into suitable pieces. The addition of the medicament may also be done, after the syrup has partly cooled on the slab. This second method is used when the medicament is of a volatile nature and easily decomposed by heat.

Lozenges can also be made by the cold process, like troches. This process is employed best when the medicaments are of a liquid nature, as tinctures, fluidextracts, etc.

**Lozenges Acid Benzoic.**

Benzoic acid.....	360 grains
Pulverized refined sugar.....	25 ounces
Gum acacia, in powder.....	1 ounce
Mucilage of acacia.....	2 fl. ounces
Sufficient distilled water.	

Mix the benzoic acid, sugar, and gum, and add the mucilage and enough water to form a proper mass. Divide into 720 lozenges, and dry them in a hot chamber at a moderate temperature.

**Lozenges Aperient.**

Sulphur .....	5 grains
Cream tartar.....	1 grain
Fluidextract of ipecac.....	1/20 drop
Tincture of capsicum.....	1/25 drop
Calcium bisulphite.....	3/4 grain
Sugar .....	8 grains

Make one lozenge.

**Lozenges Bismuth.**

Bismuth subnitrate.....	200 grains
Sugar, powdered.....	4 ounces
Calcium carbonate.....	1 ounce
Magnesium carbonate.....	1/2 ounce
Mucilage of acacia.....	1 ounce
Rose water, sufficient.	

Mix the solid ingredients, add the mucilage, and enough rose water to make a proper mass. Divide into 100 lozenges.

**Lozenges Capsicum.**

Tincture of capsicum.....	1/2 ounce
Oil of rose.....	10 drops
Sugar .....	1 pound
Mucilage of acacia, enough	
to make a mass.	

Mix and cut into 50 lozenges. These lozenges may be colored red with cochineal coloring (2 drams).

**Lozenges Charcoal.**

Sugar .....	3 pounds
Ground purified charcoal.....	1/2 pound
Tincture of ginger.....	1/2 ounce
Mucilage of acacia, a sufficiency.	

Mix the sugar, charcoal and ginger, and add enough mucilage to make a suitable mass. Put on a slab, dusted with sugar and starch. Roll into sheets and cut.

**Lozenges, Cough.**

Powdered squills .....	1 ounce
Benzoic acid .....	2 drams
Powdered ipecac .....	1 ounce
Morphine acetate .....	30 grains
Antimony and potassium	
tartrate .....	30 grains
Tartaric acid .....	1/2 ounce
Sugar .....	3 1/2 pounds
Mucilage of acacia, a sufficiency.	

Mix well, and make into a suitable mass with mucilage of acacia.

**Lozenges, Cough.**

Fluidextract of senega ....	1/2 ounce
Fluidextract of squills ....	1 1/2 ounces
Fluidextract of ipecac ....	3/4 ounce
Fluidextract of horehound ..	1 ounce
Tincture of tolu.....	1 ounce
Paregoric .....	1 ounce
Oil of anise .....	25 drops
Oil of wintergreen .....	8 drops
Oil of saffrafr .....	15 drops
Sugar .....	12 pounds

Mix all together intimately and make into a suitable mass with mucilage of acacia. Roll on a slab and cut.

**Lozenge Cough (Cough Drops).**

Powdered extract of lico-	
rice .....	1 pound
Powdered sugar .....	1 1/2 pounds
Powdered cubeb .....	3/4 pound
Powdered gum arabic.....	3/4 pound

Make into a suitable mass with water. Roll on a slab and divide.

**Lozenge Cough (Cough Drops).**

Fluidextract of horehound ..	1 ounce
Fluidextract of boneset ...	1 ounce
Fluidextract of wild cherry ..	1 ounce
Fluidextract of catnip ....	1 ounce
Fluidextract of elecampane ..	1 ounce
Morphine sulphate.....	4 grains
Oil of lemon.....	1 dram
Alcohol .....	1/2 ounce
Water .....	6 pounds
Water, a sufficiency.	

Mix the fluidextracts, dissolve the morphine in a little water, and the oil in the alcohol; mix all and add the sugar. Beat into a mass, adding water if necessary. Roll on a slab and cut.

**Cough Drops.**

Dutch crushed sugar.....	9 pounds
Brown sugar.....	5 pounds
Licorice paste.....	1 1/2 pounds
Extract of poppies.....	2 1/2 ounces
Tartaric acid.....	1 1/2 ounces
Ipecacuanha .....	1 ounce
Tincture of tolu.....	1 ounce
Oil of anise.....	1/2 ounce
Cream of tartar.....	1/2 ounce
Water .....	1 quart
Lemon flavoring.	

Method. Melt the sugars in the water and bring them to a sharp boil. Add the cream of tartar and continue to boil up to strong "crack" degree. Pour in the extract of poppies, let it boil well in; then pour the batch on an oiled slab, spread the licorice paste on the sugar, and add the remainder of the flavoring ingredients. Work all thoroughly into the sugar, pass it through the tablet rollers, and when cold sift icing sugar with the goods.

**Cough Drops.**

Dutch crushed sugar.....	10 pounds
Brown sugar.....	4 pounds
Licorice paste.....	1 pound
Cream of tartar.....	1/2 ounce
Tincture of capsicum.....	1/2 ounce
Oil of anise.....	1/2 ounce
Water .....	2 quarts
Lemon flavoring.	

Method: When the sugar has been melted in the water bring the solution to a sharp boil. Add the cream of tartar and continue the boiling up to a strong "crack" degree. Pour the mass out on an oiled slab, spread the licorice on the sugar, and add the flavoring, capsicum and aniseed. Work these thoroughly into the batch and then pass it through the small tablet rollers.

**Cough Drops.**

Dutch crushed sugar.....	8 pounds
Brown sugar.....	6 pounds
Glucose .....	2 pounds
Licorice paste.....	1½ pounds
Tartaric acid.....	1½ ounces
Paregoric .....	1 ounce
Tincture of tolu.....	½ ounce
Oil of aniseed.....	¼ ounce
Water .....	2 quarts

Method: Dissolve the sugars in the water and bring them to a sharp boil. Stir in the glucose and continue to boil until "crack" degree is reached. Pour the mass out on an oiled slab; spread the licorice paste on it, turn the edges of the sheet, add the acid and the remaining ingredients. Work all thoroughly into the sugar, and then pass it through the acid tablet rollers.

**Lozenges Digerentia.**

Lactophosphate of lime.....	1 grain
Lactophosphate of magnesia .....	½ grain
Lactophosphate of iron.....	1/16 grain
Pepsin .....	1 grain
Diastase .....	1 grain
Tincture of musk.....	1 minim
Glucose, quantity sufficient.	

Make one lozenge.

**Lozenge Ginger.**

Powdered ginger.....	1 ounce
Oil of lemon.....	15 drops
Sugar .....	1½ pounds

Make into a paste with mucilage of acacia, roll and cut.

**Lozenges Ipecacuanha.**

Ipecacuanha, in powder...	25 grains
Pulverized refined sugar...	3½ ounces
Mucilage of gum arabic...	½ ounce
Sufficient distilled water.	

Mix the powders, and add the mucilage and water to form a proper consistency. Divide into 100 lozenges, and dry in a moderate heat. Each lozenge contains ¼ grain of ipecac.

**Lozenges Laxative.**

Senna, powdered.....	5 grains
Jalap, powdered.....	5 grains
Oil of anise .....	½ drop
Oil of lemon .....	¼ drop
Sugar .....	5 grains
Tamarinds .....	10 grains

Beat into one lozenge with rose water.

**Lozenges Linseed.**

Mucilage of linseed.....	1 ounce
Oil of peppermint.....	½ dram
Sugar .....	5 pounds

Beat into a mass with water and divide into lozenges of 20 grains.

**Lozenges Linseed and Licorice.**

Mucilage of linseed.....	1 ounce
Extract of licorice.....	2 drams
Oil of peppermint.....	½ dram
Sugar .....	5 pounds

Proceed as directed in the preceding.

**Lozenges Linseed, Licorice and Chlorodyne (Chlorodyne Cough Drops).**

Mucilage of linseed.....	1 ounce
Extract of licorice.....	2 drams
Chloroform .....	6 drams
Capsicum .....	½ dram
Oil of peppermint.....	½ dram
Sugar .....	5 pounds

Proceed as in making linseed lozenges.

**Lozenges Magnesia (Heartburn Lozenges).**

Magnesia carbonate, heavy	3 ounces
Prepared chalk .....	3 ounces
Powdered orris root.....	3 ounces
Oil of nutmeg.....	10 drops
Sugar .....	1½ pounds
Mucilage of acacia, a sufficiency.	

Mix the solid ingredients and make a mass with the mucilage. Roll and cut.

**Lozenges, Opium.**

Extract of opium.....	10 grains
Pulverized refined sugar...	2 ounces
Extract of licorice.....	1 ounce
Gum acacia, in powder...	¼ ounce
Tincture of tolu.....	1 dram
Sufficient distilled water.	

Add the extract of opium, first softened by means of a little water, and the tincture of tolu to the extract of licorice, previously heated in a water bath. When the mixture is reduced to a proper consistency, remove it to a slab, add the sugar and gum, previously rubbed together, and mix thoroughly. Divide the mass into 100 lozenges, and dry in a moderate temperature.

Each lozenge contains 1-10 of a grain of extract of opium, or 1-50 of a grain of morphine.

**Lozenges, Reduced Iron.**

Reduced iron .....	100 grains
Sugar, powdered .....	3½ ounces
Mucilage of acacia.....	1 ounce

Make into a mass, adding water, if necessary. Divide into 100 lozenges.

**Lozenges, Slippery Elm.**

Slippery elm bark, cut....	4 ounces
Water, sufficient, or.....	12 ounces
Sugar, in very fine powder	2 pounds

Macerate the bark in the cold water for about twenty-four hours; strain the liquor and evaporate it, at a gentle heat, to 4 ounces. To this, when cold, add enough finely powdered sugar to form a mass of the proper consistency; the quantity required will not be very far from two pounds. Lastly mix in the flavoring material and divide the mass into troches weighing from ten to fifteen grains each.

**Lozenges Sodium Bicarbonate.**

Sodium bicarbonate.....	500 grains
Sugar, powdered.....	4 ounces
Mucilage of acacia.....	1 ounce
Water, a sufficiency.	

Mix, and make into a mass with water. Roll and divide into 100 lozenges.

**Lozenges, Sulphur.**

Sulphur .....	500 grains
Sugar, powdered.....	4 ounces
Mucilage of acacia.....	1 ounce
Water, a sufficiency.	

Mix, and proceed as in making sodium bicarbonate lozenges.

**Lozenge, Voice.**

Cubeb .....	½ grain
Benzoic acid.....	1/3 grain
Cocaine hydrochloride...	1/70 grain
Powdered tragacanth.....	¼ grain
Extract of licorice.....	5 grains
Sugar .....	13 grains
Eucalyptol .....	¼ minim
Oil of anise.....	1/20 minim
Black currant paste, quantity sufficient to make..	20 grains

For ordinary hoarseness of singers and speakers, dissolve a small piece in the mouth just before vocal exertion.

In the absence of black currant paste, mucilage of acacia may be used.

**Lozenges Sulphur and Cream Tartar.**

Sulphur .....	500 grains
Cream tartar.....	100 grains
Sugar .....	4 ounces
Mucilage of acacia.....	1 ounce
Water, a sufficiency.	

Proceed as with sodium bicarbonate lozenges.

**Pastilles.**

Pastilles are shaped like small balls or cubes, and consists of glyco-gelatin to which the medicament is added. Where orders for special formulas are often received, it is best to have the glyco-gelatin in stock. Melt it on a water bath and add the medicament rubbed up with a little glycerin.

**Pastilles (Plain) (Glyco-Gelatin).**

Transparent gelatin.....	4 ounces
Sugar, in powder.....	4 ounces
Glycerin .....	2½ ounces
Water, sufficient to make.	16 ounces

Soak the gelatin in a little water for 2 hours, warm on a water bath, and when dissolved, incorporate the other ingredients.

**Pastilles (plain) Colored (Glyco-Gelatin).**

Glyco-gelatin .....	1 pint
Ammoniated solution of carmine .....	1 dram
Melt the glyco-gelatin on a water bath, and add the carmine solution.	
In place of the carmine solution, any other color (in solution) may be added.	

**Pastilles, flavored (Glyco-Gelatin).**

To flavor glyco-gelatin, the essential oils are best suited, using about one dram of oil (or mixed oils) to a pint of glyco-gelatin. Proceed as under the preceding formula.

Glyco-gelatin can also be flavored by using aromatic water instead of plain water in its preparation. Tolu water is preferred.

**Pastilles Ammonium Chloride.**

Ammonium chloride.....	96 grains
Ammoniated glycyrrhizin..	24 grains
Glyco-gelatin, plain.....	4 ounces

Rub the ammonium chloride and glycyrrhizin with a little water, melt the glyco-gelatin on a water bath, add the solution, stir, let cool and cut into 48 pieces.

**Pastilles, Breath (Pastilles for Fetid Breath).**

Coffee, roasted and powdered .....	3 ounces
Charcoal, powdered.....	1 ounce
Boric acid.....	1 ounce
Saccharin .....	10 grains
Tincture of vanilla, sufficient quantity.	

Mucilage of acacia, sufficient quantity.

Reduce the solids to a moderately fine, uniform powder, flavor with the tincture and then with enough mucilage to make a mass, which is to be divided into troches or pastilles, each weighing 10 grains.

**Pastilles Cocaine.**

Cocaine hydrochloride....	3 grains
Citric acid.....	8 grains
Oil of lemon.....	6 drops
Glyco-gelatin .....	2 ounces

Make 24 pastilles according to directions for pastilles ammonium chloride.

**Pastilles Guarana.**

Powdered guarana.....	150 grains
Powdered sugar.....	300 grains
Vanillin .....	10 grains
Cacao .....	1,050 grains

Mix, and with a gentle heat make a mass, which divide into 100 pastilles.

**Pastilles Menthol.**

Menthol .....	4 grains
Alcohol .....	½ ounce
Glyco-gelatin .....	1,500 grains
Flavoring, to suit.	

Dissolve the menthol in the alcohol and proceed as for pastilles ammonium chloride.

**Pastilles, Migraine.**

Phenacetin .....	200 grains
Caffeine-sodium salicylate.	100 grains
Morphine hydrochloride...	5 grains
Saccharin .....	5 grains
Glyco-gelatin .....	1,200 grains

Make 100 pastilles as directed under pastilles of ammonium chloride.

**Pastilles, Morphine.**

Morphine acetate.....	10 grains
Powdered sugar.....	1,450 grains
Powdered tragacanth ....	10 grains
Glycerin .....	30 grains
Water, quantity sufficient.	

Make into 100 pastilles, each containing 1/10 grain morphine acetate.

**Pastilles, Morphine and Ipecac.**

Morphine acetate.....	3 1/3 grains
Ipecac, powdered.....	10 grains
Oil of lemon.....	25 drops
Citric acid .....	30 grains
Glyco-gelatin .....	1,450 grains

Make 100 pastilles, as directed for pastilles of ammonium chloride.

Each pastille contains 1/30 grain of morphine and 1/10 grain of ipecac.

**Pastilles, Saccharin.**

Saccharin .....	50 grains
Sodium carbonate, dry....	40 grains
Sugar .....	910 grains

Make 100 pastilles with water. One pastille is sufficient to sweeten a cup of tea, coffee, or chocolate.

**Pastilles, Tar.**

Tar .....	100.0
Glycerin .....	200.0
Distilled water .....	200.0
Alcohol .....	50.0

Allow to stand three hours, frequently agitating, then set aside for several days in a cool place, frequently agitating. Decant the clear solution and evaporate upon the water bath to 250.0. Mix this with

Cacao mass (from which the oil has been liberated).....	300.0
Sugar .....	350.0
Tragacanth .....	100.0
Water, quantity sufficient.	

Make into a mass and divide into 1,000 troches.

**Pastilles, Tar.**

Tar .....	5 drams
Alcohol .....	1 ounce
Tar water .....	8 ounces
Gum tragacanth, powdered	1 dram
Powdered sugar .....	1 pound
Oil of lemon.....	25 drops

Dissolve the tar in the alcohol, add the tar water, and evaporate the mixture on a water bath until it is reduced to 1 ounce and a half. Strain to separate the resinous matters, and add the gum tragacanth to the clear liquid to make a mucilage, and lastly the sugar, to obtain a mass to be divided into about 450 troches. Each pastille contains the active principle of 2 ounces of tar water.



**Sprays.**

Sprays for use in an atomizer are often called for. They are solutions of various drugs in water, alcohol, or oil, the latter being preferred by most physicians. If alkaloids are ordered, it should be remembered that the pure alkaloids are insoluble, or nearly so, in water, so that in preparing aqueous sprays such soluble salts of the alkaloids as the sulphate or hydrochloride, must be used. On the other hand, most alkaloidal salts are insoluble in oil, so that for oily sprays the pure alkaloids must be used. The oil generally used is liquid paraffin or white oil. It should be odorless and colorless and of the highest specific gravity attainable.

**Spray, Alcoholic.**

Tincture of benzoïn..... ¼ ounce  
Alcohol ..... 1½ ounces

Mix. This is used as a base for many alcoholic sprays.

**Spray, Oily.**

Benzoïn ..... 1 ounce  
Liquid paraffin..... 1 pint  
Digest the benzoïn in the paraffin for 12 hours at a moderate heat. Cool and filter.  
This spray is preferred by many to the plain white oil as a base for oily sprays. It is known under various names, as benzoïnated oil, benzoïn-oil, etc.

**Spray Acid Carbolic.**

Carbolic acid..... 10 grains  
Oil ..... 1 ounce

Mix. Care must be taken to have the carbolic acid free from water, otherwise the spray will be cloudy.

**Spray Anesthetic.**

Menthol ..... 1 grain  
Ether ..... 15 drops  
Chloroform ..... 100 drops  
Use externally.

**Spray Chloroform.**

Chloroform,  
Liquid paraffin, of each, equal parts.

**Spray Cocaine (oily).**

Cocaine (alkaloid)..... 25 grains  
Liquid paraffin..... 1 ounce  
Dissolve the cocaine in the oil with a gentle heat.

**Spray Cocaine (watery).**

Cocaine hydrochloride..... 25 grains  
Sterilized water..... 1 ounce  
Dissolve.

**Spray Copaiba.**

Copaiba ..... 1 dram  
Ether ..... 2 drams  
White oil ..... 5 drams  
Mix.

**Spray Creosote (or Guaiacol).**

Creosote (or guaiacol)..... ½ dram  
White oil ..... 1 ounce  
Mix.

**Spray, Ether.**

Ether,  
Liquid paraffin, of each, equal parts.

**Spray Eucalyptus Oil.**

Oil of eucalyptus ..... 1 dram  
Liquid paraffin ..... 1 ounce  
Mix.

**Spray Eucalyptol.**

Eucalyptol ..... ½ dram  
Liquid paraffin ..... 1 ounce  
Mix.

**Spray Eucalyptus Compound.**

Oil of eucalyptus..... ½ dram  
Terebene ..... ½ dram  
Menthol ..... 3 grains  
Liquid petrolatum..... 2 ounces  
Mix.

**Spray Eucalyptol and Ether.**

Eucalyptol ..... 20 minims  
Creosote ..... 10 minims  
Ether ..... 2 drams  
Oil of sweet almond,  
enough to make..... 1 ounce  
Mix.

**Spray Eucalyptol and Cocaine.**

Carbolic acid, crystals..... 1 dram  
Eucalyptol ..... 1 dram  
Cocaine alkaloid..... 10 grains  
Oil petrolatum, enough to  
make ..... 3 ounces

Dissolve the cocaine in 1 ounce of oil with a gentle heat, add the other ingredients and enough oil to make 3 ounces.

**Spray, Menthol.**

Menthol ..... 5 to 10 grains  
Liquid paraffin ..... 1 ounce  
Dissolve.

**Spray Menthol and Cocaine (Alcoholic).**

Menthol ..... 10 grains  
Cocaine ..... 5 grains  
Tincture of benzoïn comp. 1 ounce  
Alcohol ..... 1 ounce

Dissolve the menthol and cocaine in the alcohol and add the tincture.

**Spray Menthol Compound; Alcoholic.**

Eucalyptol ..... 10 drops  
Thymol ..... 2 grains  
Menthol ..... 10 grains  
Oil of wintergreen..... 5 drops  
Alcohol ..... 1 ounce

Dissolve the first four ingredients in the alcohol.

**Spray, Menthol Compound, oily.**

Eucalyptol ..... 10 drops  
Menthol ..... 10 grains  
Thymol ..... 2 grains  
Oil of wintergreen..... 5 drops  
Liquid paraffin..... 1 ounce  
Dissolve.

**Spray Menthol, Compound.**

The two preceding formulas are typical for this class of preparations. The amount of menthol may be varied from 2 to 20 grains, and other aromatic oils added. In the same way the eucalyptol and thymol may be increased or decreased.

**Spray, Pine.**

Oil of pine needles..... 1 dram  
Liquid paraffin..... 1 ounce  
Mix.

**Spray, Pine, Compound.**

Dissolve in 900 parts of alcohol, 80 parts of oil of pine needles (*pinus sylvestris*), 10 parts of oil of juniper berries, 5 parts of oil of rosemary, 3 parts of oil of lavender and 2 parts of the oil of lemon. The oils must all be of the finest quality.

**Oil of Pine Inhalation.**

Oil of *pinus sylvestris*..... 2 drams  
Magnesium carbonate..... 1 dram  
Water ..... 3 ounces

A teaspoonful in a pint of hot water for each inhalation.

**Spray, Tar.**

Oil of tar.....	½ dram
Liquid paraffin.....	1 ounce
Mix.	

**Spray, Terebene.**

Terebene .....	1 dram
Liquid paraffin.....	7 drams
Mix.	

**Tar and Turpentine Inhalation.**

Oil of tar .....	2 ounces
Oil of turpentine .....	2 ounces

Pour slowly on a hot shovel in a sick room, keeping the vapor confined therein.

**Spirit of Pines, for Inhalation.**

Oil of pinus sylvestris.....	100 grams
Oil of pinus pumilionis....	1 gram
Oil of orange peel.....	25 grams
Acetic ether.....	25 drops
Alcohol .....	200 grams
Oil of cardamom .....	1 drop

Dissolve the oils in the spirit, add the ether, and color with a few drops of chlorophyll. Only a small quantity of this preparation should be kept in stock, and all should be kept in a cool, dark place, as it is liable to deteriorate.

This spirit is used sometimes as a spray, and sometimes as an inhalation, by pouring a tablespoonful on boiling water.

**Pencils or Crayons.**

The preparation of medicated pencils requires some experience and should not be entrusted to unskillful hands. The base consists either of cacao butter or of a mixture of acacia, tragacanth, glycerin and water. The following formulas may serve as samples, and other medicaments may be substituted, wherever ordered.

**Crayon Balsam of Peru.**

Balsam of peru.....	5 grains
Glycerin or vaseline.....	5 grains
Cacao butter.....	24 grains

Melt together on a water bath, stir till nearly solid, and roll on a slab, covered with lycopodium or starch.

**Crayon Corrosive Sublimate.**

Corrosive sublimate.....	1 grain
Glycerin .....	5 grains
Cacao butter.....	24 grains

Dissolve the corrosive sublimate in the glycerin and proceed as directed in the preceding formula.

**Crayon Iodoform.**

Iodoform .....	10 grains
Gum tragacanth.....	50 grains
Glycerin and water, a sufficiency.	

Mix the iodoform with 10 drops of glycerin, add the tragacanth gradually, and enough water to make a pliable mass. Roll on a slab covered with starch.

**Crayon Iodoform.**

Iodoform .....	20 grains
Acacia, .....	
Starch, of each.....	30 grains
Glycerin .....	20 drops
Water, a sufficiency.	

Proceed as in the preceding.

**Crayon Iodoform, Hard.**

Iodoform .....	20 grains
Acacia .....	10 grains
Powdered sugar .....	10 grains

Mix with water to a pilular mass, and roll out on a slab.

**Crayon Iodoform, Flexible.**

Gelatin .....	1 dram
Glycerin .....	2 drams
Water .....	1 dram
Iodoform .....	4 parts

Dissolve the gelatin in the glycerin and water on a water bath, replacing any water lost by evaporation. Then mix with it the iodoform and pour into molds.

**Pencils Iodoform, Fusible.**

Iodoform .....	10 parts
Cacao butter.....	9 parts
Liquid paraffin.....	1 part

Mix the cacao butter (in fine shavings) with the liquid paraffin to a uniform mass, without employing heat; then incorporate the iodoform and roll the mass out to pencils.

**Crayon Iodoform, Deodorized.**

Iodoform .....	30 parts
Oil of peppermint.....	6 parts
Glycerin .....	10 parts
Cacao butter.....	20 parts

Mix and roll as under Balsam of Peru Crayons.

**Ophthalmic Crayons.**

Red precipitate.....	0.30 gram
Zinc sulphate.....	0.60 gram
Vaseline .....	10. grams
Cacao butter.....	20. grams

Reduce the red precipitate and sulphate of zinc to a very fine powder, mix with the vaseline and proceed as in the above.

**Ophthalmic Crayons.**

Red precipitate.....	3. grams
Oxide of zinc.....	3. grams
Acetate of lead.....	3. grams
Burnt alum.....	3. grams
Corrosive sublimate.....	0.45 gram
Glycerin .....	10. grams
Cacao butter.....	20. grams

Reduce the solids to a very fine powder, mix with the glycerin and proceed as in the preceding.

**Ophthalmic Crayons.**

Red precipitate.....	1.50 grams
Powdered camphor.....	1.50 grams
Acetate of lead.....	1.50 grams
Vaseline .....	10. grams
Cacao butter.....	20. grams

Proceed as before.

**Crayon of Oil of Cade.**

Oil of cade.....	1 gram
Glycerin .....	10 grams
Cacao butter .....	20 grams

Proceed as before.

**Crayon of Opium and Belladonna.**

Extract of opium.....	5 grams
Extract of belladonna ....	5 grams
Glycerin .....	5 grams
Cacao butter .....	20 grams

Rub the extracts with the glycerin and proceed as before.

**Crayon of Red Precipitate.**

Red precipitate .....	1½ grams
Glycerin .....	10. grams
Cacao butter.....	20. grams

Proceed as with ophthalmic crayons.

**Crayon of Tar.**

Norway tar.....	5 grams
Vaseline .....	5 grams
Cacao butter .....	20 grams

Proceed as with ophthalmic crayons.

**Crayon of Turpeth Mineral.**

Turpeth mineral..... 1 gram  
 Salep, in fine powder..... 2 grams  
 Glycerin ..... 10 grams  
 Cacao butter ..... 20 grams  
 Proceed as with ophthalmic crayons.

**MISCELLANEOUS.****Alcohol, to Deodorize.**

To each gallon add an aqueous solution of four to eight grains of permanganate of potassium, shake well, and add after five minutes as much chloride of lime, previously rubbed with a little water. Filter the liquor after several hours, and set it aside for a few days. The alcohol will then have lost its chlorine smell, and acquired a peculiar flavor, which, however, depends upon the proportions of the permanganate and the chloride of lime. If then distilled, the alcohol may be used as the finest cologne spirit.

**Alcohol, to Deodorize.**

Alcohol ..... 1 gallon  
 Unslaked lime..... 4 drams  
 Powdered alum..... 2 drams  
 Spirit of nitrous ether..... 1 dram

First reduce the lime to a very fine powder, add to it the alum, mix the two powders well together, and pour them into the alcohol. Shake well, add the spirit, and shake again. After the mixture has been kept a week, with occasional agitation, filter it through animal charcoal.

**Clarifying Powder for Alcoholic Liquids.**

Egg albumen, dry..... 40 parts  
 Sugar of milk..... 40 parts  
 Starch ..... 20 parts

Reduce them to a very fine powder and mix thoroughly. For clarifying liquors, wines, essences, etc., take for every quart of liquid 75 grains of the above mixture. Shake repeatedly in the course of a few days, the mixture being kept in a warm room. Then filter. Powdered talcum renders the same service, and has the additional advantage of being entirely insoluble.

**Clearing Powder for Wines, Liquors, Vinegars, Etc.**

Albumen ..... 3 pounds  
 Neutral potassium tartrate..... 4 1/2 ounce  
 Alum ..... 1/2 pound  
 Ammonium chloride..... 7 pounds

The powder must not be added direct to the liquid to be cleared, but must first be mixed with soft water. About 20 grains of this powder are said to be sufficient for clearing a gallon of fluid.

**Vinegar Ipecac.**

Take of ipecacuanha root in No. 20 powder 1 ounce, acetic acid 2 fluid ounces, distilled water q. s. Macerate the powder in 1 ounce of the acid for 24 hours, and then pack in a percolator. Mix the remainder of the acid with 10 ounces of distilled water, and percolate with the mixture, continuing the percolation with distilled water until 1 pint of the vinegar is obtained.

**Acid Acetic Carbolated.**

Mix 10 carbolic acid cryst., 85 acetic acid, and 5 oil of eucalyptus. For fumigating the sick chamber, drop upon a hot plate.

**Acid Acetic, Spiced.**

Ginger ..... 1/2 ounce  
 Pimento ..... 1/2 ounce  
 Capsicum ..... 1/2 ounce  
 Curry powder ..... 1 ounce  
 Black pepper ..... 2 ounces  
 Mustard seed ..... 4 ounces  
 Acetic acid ..... 16 ounces  
 Boiling water, enough to make ..... 4 pints

Bruise the drugs and macerate for a day in the acetic acid, then add 3/4 pints of boiling water, macerate for 4 hours, strain and add water to make 4 pints.

**Antidote, Arsenic.**

Tincture of iron chloride.. 1 ounce  
 Sodium (or potassium) bicarbonate ..... 1 ounce  
 Tepid water.....a teacupful

Sesquioxide of iron suspended in solution of chloride of sodium (containing, however, a large excess of alkaline bicarbonate) is thus produced. The mixture may be given almost ad libitum.

**Antidote, Jeannel's Multiple.**

1—Crystallized ferrous sulphate ..... 139 grams  
 Warm distilled water.....110 grams  
 2—Crystallized sodium monosulphide ..... 110 grams  
 Calcined magnesia..... 29 grams  
 Distilled water.....600 grams

The mixture of these liquids produces sulphide of iron (without excess of alkali or ferrous sulphate), sulphate of soda, a little sulphate of magnesia and ferrous oxide, and a large excess of magnesia. There are thus present three efficient antidotes, sulphide of iron, ferrous oxide, and magnesia, besides two purgative salts, sulphates of soda and magnesia.

The preparation should be kept from contact with air. It is administered in large and frequently repeated doses in cases of poisoning by metallic preparations, cyanides or hydrocyanic acid; it is not, however, an antidote for the preparations or arsenic, tartar emetic, or the salts of the alkaloids.

**Chlorine, Rapid Generation.**

Chlorinated lime mixed with sufficient bisulphate of potassium or sodium to liberate all the chlorine. It needs merely the addition of water.

**Mass Copaiba.**

Copaiba ..... 10 parts  
 Glycerin ..... 2 parts  
 Sugar ..... 10 parts  
 Magnesia (calcined)..... 10 parts  
 Powdered licorice root..... 8 parts

Rub up the copaiba and glycerin intimately together, and then add the remaining ingredients gradually in the order named.

By increasing or decreasing the amount of glycerin, a more or less hard or soft mass can be prepared, the soft mass to be dispensed as such by means of a teaspoon, or the hard mass can be put into capsules.

**Capsules Copaiba Compound.**

Salol ..... 3 1/2 grains  
 Oleoresin of cubeb..... 5 grains  
 Balsam of Para copaiba. 10 grains  
 Pepsin ..... 1 grain

Mix intimately. If the mass is too soft for the purpose required, calcined magnesia may be added; if too hard, add glycerin.



**Capsules Gelatin.**

Gelatin .....	8 parts
Sugar .....	2 parts
Gum arabic .....	1 part
Water (on a water bath) ..	8 parts

Macerate the gelatin in 4 parts of water for two hours, add the other ingredients and the remainder of the water and dissolve on the water bath. Pour into a suitable container. When needed, a part of this gelatin may be softened on the water bath, adding, if necessary, a few drops of water.

**Capsules, Gelatin Flexible.**

Gelatin, in thin sheets....	16 ounces
Water .....	20 ounces
Glycerin .....	12 fl. ounces
Simple syrup .....	8 fl. ounces

Mix the water, glycerin and syrup, and soak the gelatin in the mixture; when uniformly soft, melt on a water bath.

**Glycerol Thymol.**

Thymol .....	1
Glycerin .....	25
Alcohol .....	25
Water, sufficient to make....	500

Dissolve the thymol in the alcohol, add the glycerin, shake well, add the water in small portions, shaking after each addition. Filter.

**Glycerite Thymol.**

Thymol .....	1 dram
Glycerin .....	4 ounces
Alcohol .....	4 ounces
Distilled water enough to make .....	4 pints

**Glycerite Acid Tartaric (Vidal's Glycerole).**

Acid tartaric, powdered....	22 grains
Glycerite of starch.....	1 ounce

Mix.

**Glycerite Aloes.**

Aloes Socotrine, powdered.	1 ounce
Glycerin .....	8 ounces

Rub the powdered aloes in a mortar with the glycerin, transfer to a bottle, and heat on a water bath till dissolved. Strain.

**Glycerite Orange.**

Tincture of sweet orange peel .....	1 ounce
Glycerin .....	7 ounces

Mix.

**Glycerite Belladonna.**

Extract of belladonna....	1 ounce
Boiling water .....	2 drams
Glycerin, enough to.....	2 ounces

Rub the extract with the boiling water in a hot mortar, add the glycerin, previously heated. Mix.

**Glycerite Camphor-Chloral.**

Chloral hydrate .....	1 dram
Camphor .....	48 grains
Glycerin .....	5 drams

Rub the chloral and camphor, add the glycerin heated to 125° F.

**Glycerite Camphor-Chloral Compound.**

Camphor .....	2½ drams
Chloral hydrate .....	2 drams
Oil of juniper .....	1 dram
Glycerin .....	1 ounce
Alcohol .....	1 ounce

Mix camphor and chloral and alcohol till dissolved, add the oil, then the glycerin.

**Glycerite Carmine (Red Coloring).**

Carmine .....	1 dram
Ammonia water.....	100 drops
Glycerin .....	6 drams
Water, enough to make....	1 ounce

Mix the carmine with 80 drops of ammonia and 1 dram of water and dissolve. Add the glycerin and heat on a water bath till free from ammonia odor. When cold, add the remainder of the ammonia and water to make 1 ounce.

This is a reliable, permanent coloring for all kinds of galenicals.

**Glycerite Chloroform.**

Chloroform .....	½ ounce
Alcohol .....	10 drams
Glycerin, enough to make..	5 ounces

Mix.

**Glycerite Spanish Saffron (Glycerite Crocus).**

Spanish saffron.....	½ ounce
Glycerin .....	8 ounces
Diluted alcohol.....	8 ounces

Digest the saffron in the mixed liquids for an hour at a gentle heat, filter and add enough glycerin to make 1 pint.

**Glycerite Dialyzed Iron.**

Dialyzed iron, liquid.....	1 ounce
Glycerin .....	2 ounces

Mix.

**Gray Oil.**

Triturate in a warm mortar 1.5 grams solid white vaseline, 1 gram mercurial ointment, and 19.5 grams of mercury, until the mercury is extinguished, then add 7 grams of white vaseline (solid) and 20 grams of liquid vaseline. The preparation contains 40 per cent of mercury, and is quite liquid.

**Sponges Iodoform.**

Immerse the sponges in water containing 5 per cent of hydrochloric acid, and after allowing them to stand five days wash them thoroughly in fresh water, dry and then place in a 7½ per cent ethereal solution of iodoform, and finally allow the ether to evaporate and preserve the sponges in glass stopper bottles. An excellent method, particularly applicable to small soft sponges, which should be very carefully cleansed prior to the operation.

**Iron Milk.**

Sodium pyrophosphate ....	3 drams
Solution of iron chloride.3½	drams
Glycerin .....	6 ounces
Distilled water, enough to make .....	1 pint

Dissolve the sodium pyrophosphate in 5 ounces of distilled water, add the glycerin, and filter. Dilute the solution of iron chloride (U. S. P.) with 4 ounces of distilled water, pour this slowly into the cold solution of the sodium salt, under gentle and slow stirring, and add enough water to make 1 pint.

**Honey Licorice, Aromatized.**

Fluidextract of licorice root	4 fl. ounces
Fluidextract of coriander .	1 dram
Fluidextract of fennel ....	30 minims
Fluidextract of cardamom .	60 minims
Fluidextract of anise .....	30 minims
Deodorized alcohol .....	4 fl. ounces
Distilled water .....	5 fl. ounces
Clarified honey .....	19 fl. ounces

Mix.

**Glycerite Corrosive Sublimate.**

Corrosive sublimate..... ½ dram  
Glycerin ..... 1 ounce

Dissolve. This is a convenient solution for making antiseptic lotions, a teaspoonful in 8 ounces of water giving nearly a 1:1,000 solution.

**Iron Milk (Lac Ferratum).**

Sodium phosphate, 3 drams; solution of iron chloride, 2 drams; distilled water, 1 pint. Dissolve the sodium phosphate in the distilled water and gradually pour in the solution of chloride of iron (previously diluted with 3 or 4 volumes of distilled water) stir well, collect the precipitate upon a linen strainer, wash it with distilled water until the washings are scarcely rendered turbid by solution of silver nitrate, and mix the still moist precipitate with sufficient distilled water to produce a volume of 1 pint. It contains 0.25 per cent of iron.

**Iron Oxide Dextrinated, Soluble.**

Dextrin, pure, sufficient quantity.  
Solution of oxychloride of iron ..... 290 parts  
Solution of soda ..... 25 parts  
Distilled water, sufficient quantity.

Dissolve 80 parts of pure (yellow soluble) dextrin in 80 parts of distilled water, dilute the liquid with the solution of oxychloride of iron (equivalent to dialyzed iron, sp. gr. 1.050), filter, and wash the filter with a little water. Heat the filtrate in a capsule to between 70 and 90° C., gradually add while stirring, the solution of soda (containing nearly 15 per cent of pure soda, sp. gr. 1.159-1.163), and evaporate to dryness. The dry, dark-brown mass, having a red-brown color by transmitted light, is reduced to a fine powder, and mixed with enough pure dextrin to make 100 parts of product. It is soluble in 1.5 parts of water. One hundred parts contain 10 parts of iron.

**Lotion Lead and Opium.**

Solution of subacetate of lead ..... 1 fl. ounce  
Glycerin ..... 1 fl. ounce  
Tincture of opium ..... 1 fl. ounce  
Water, enough to make... 1 pint

Dilute the tincture of opium with 10 ounces of water. Mix the lead and glycerin together, add these, and finally make up to 1 pint with water.

**Menthol Cones.**

The molds must be perfectly smooth inside, and the two parts should join exactly. An ordinary 2-dram pessary mold is sometimes used for the cones, and in the absence of anything else is quite suitable. Menthol to be used for making cones must be quite free from oil. Place the menthol in 1-ounce quinine bottle, and then place the bottle in hot water. Its contents soon melt and are ready for pouring into the mold. Meanwhile, the latter should have been placed near the fire, so as to acquire such a degree of warmth as may be comfortably held in the hand. It is very important that this heating should be carefully attended to as the temperature of the mold has much to do with the success of the operation. As soon as the cones solidify, they are removed from the molds, so as to prevent the latter from becoming cold again. Once the molds get below the proper temperature, the cones are certain to break. The next thing to do is to fix them in the holders. This is a matter which requires some attention and care. Instead of melting the base of the cone in a spirit flame, as is generally done, a better plan is

as follows: Get a lead ring made and place it (the smaller end downwards) in a flat evaporating dish (the lid of a 2-ounce ointment pot will do), along with some menthol. When the latter has melted dip a cone first in the ring, then in the hot menthol, and immediately fix in the holder.

**Menthol Pencils.**

Menthol pencils may be prepared by carefully melting pure menthol and pouring it into tin molds having about the form of an ordinary thimble, in which it is allowed to crystallize at a low temperature, usually by placing in an ice chest or other cold place for 12 hours. The menthol cone is removed from the mold and attached to a handle and preserved in a convenient form for use. The cone or pencil may be attached to the handle or holder by first coating the holder with paraffin, then heating the pencil slightly and immediately setting it on the holder. If the end of the holder is smooth no filling is required and the warmed menthol can be directly applied to the wood. Liquid glue or a solution of glue in hot water has also been recommended for attaching the pencils to the holder.

**Menthol Pencils.**

Menthol, 8 ounces; melt and mold into proper shape by means of brass molds, then put into wooden cases by simply heating one end of the cone over a small flame as sealing wax is heated, and quickly place in the recess.

**Menthol Pencils.**

Cacao butter is melted on a water bath with 3 to 4 per cent of pure wax, and the menthol is added to the somewhat cooled mass in the proportion prescribed by the physician—this amounting usually to 3 or 4 per cent. By suction it is collected in glass tubes of the required bore—from the thickness of a knitting needle to that of a lead pencil—which have previously been moistened with glycerin, and the tubes are then placed in cold water. After a short time the menthol pencils are removed from the tubes by means of wires or glass rods of suitable size.

**Medicated Pencils.**

Many forms of medicated pencils are made with cacao butter as a base, the ingredients being mixed in a mortar and rolled out or molded into cylinders of suitable thickness. As made by some manufacturers the mass, properly prepared, is placed into a cylinder provided with a plunger operated by a screw press. At the bottom of the cylinder are provided holes or apertures of the required diameter through which the mass in cylinders is forced out by the pressure of the plunger when screwed down. Formulas for a number of pencils which can be made in this way appeared in the Proceedings of the A.Ph.A. for 1889 (page 294).

**Lunar Caustic Pencils.**

The type of most of the molded pencils on the market or in use is furnished by the pharmacopoeial formula for "molded silver nitrate" or lunar caustic. This directs to melt at as low a temperature as possible, in a porcelain capsule, 100 grams of silver nitrate and 4 grams of hydrochloric acid; stir the mixture well and pour the melted mass into suitable molds. The object of adding the hydrochloric acid is to produce sufficient silver chloride to toughen the mass so that the cast cones or sticks will not break so easily. Sometimes a little diluted nitric acid (1 in 5) is carefully added to the melted nitrate in order to keep the sticks from becoming discolored during the casting process. A weaker or "mitigated" lunar caustic is also molded or cast in a similar manner.

The molds are made in halves which are hinged together at one end, each half or arm of the molds carrying half of the forms or matrices into which when the halves or arms of the mold are locked together the melted mass is poured.

#### Copper Sulphate Pencils.

Copper sulphate pencils, according to Coberg, may be readily and satisfactorily made by triturating 4 parts of copper sulphate briskly with 1 part of borax. The water of crystallization given out unites the salts into a plastic mass readily molded. Llovet uses 4 parts of copper sulphate and 1 part of potassa alum by fusing them together in a porcelain dish and running the mass into molds. Coberg's method is preferably conducted in a warm mortar, the liberated water of crystallization enabling the formation of a plastic mass which may then be formed into cylinders of the required size and shape. Owing to the rapidity with which the mass hardens, it is necessary to work rapidly, otherwise the addition of a few drops of water will reimpair the proper consistence. Copper sulphate may be also molded pure, or mixed with half its weight of powdered alum, and the mixture fused and molded. In molding the fused mass, the mold should be warm to prevent too sudden congealing, and the melted mass should be near its congealing point to obtain a smooth surface. Pencils of pure copper sulphate may also be formed out of selected crystals of the salt by turning in a lathe, or by filing.

#### Paste Pencils (Unna Pencils).

The National Formulary furnishes two formulas with the direction for the manufacturer of this class of pencils. Practically the medicinal substance is incorporated with the vehicle, composed of tragacanth, 5 per cent, dextrine, 35 per cent, sugar, 20 per cent, and sufficient starch, including the medicinal agent to make 100 per cent. Water is then added to form a firm plastic mass, which is rolled into cylinders of the required diameter and length. The cylinders are then dried and wrapped in tinfoil. Pencils are also made with wax and fats, practically the same methods being employed as those used in making urethral suppositories.

#### Species Wood (Holzthee).

Guaiaac wood, rasped.....	4 parts
Burdock root, cut.....	2 parts
Ononis spinosa, cut.....	2 parts
Licorice root, cut.....	1 part
Sassafras root, cut.....	1 part

Mix.

#### Species Aromatic (Aromatic Tea).

Peppermint leaves .....	2 ounces
Lemon thyme .....	2 ounces
Thyme .....	2 ounces
Lavender flowers .....	2 ounces
Cloves (in coarse powder) ..	1 ounce
Cubeb (in coarse powder) ..	1 ounce

Mix.

#### Pine Spirit (Pine Vapor).

Pine-spirit or pine-vapor, used as a spray in purifying the atmosphere of rooms, is made as follows: 70.0 oil of pinus sylvestris, 8.0 oil of juniper berries, 5.0 oil of rosemary, 2.0 each of the oils of lavender and lemon, 1.0 oil of bergamot, and 1000.0 alcohol are allowed to stand in a moderately warm place for several days, filtered and then bottled. A more pleasant aroma is obtainable if to the above be added 200.0 pine twigs and 500.0 additional alcohol and distilling after allowing to stand for a few days.

#### Spirit Wormwood Compound.

Wormwood .....	4 pounds
Juniper .....	9 ounces
Cinnamon .....	2 ounces
Angelica root .....	½ ounce
Alcohol, 34 per cent.....	17 pounds

Macerate for 14 days, distill 12 pounds, pour back and re-distill 10 pounds.

#### Solidified Alcohol.

The process of solidifying alcohol depends on the formation of a soap in which the alcohol is emmeshed. Melt 4½ drams of stearin and add ½ dram of sodium carbonate, then add 95 drams of alcohol, heating for an hour in a closed vessel. The alcohol may be colored. The solidified product may be cut into cubes or other shapes.

#### Syrup Spice.

Spice tincture .....	1½ fl. ounces
Honey .....	16 fl. ounces
Water .....	4 fl. ounces
Syrup .....	20 fl. ounces

Or the honey and water may be replaced with the same bulk of syrup.

#### Tincture of Tumenol.

Mix 1 part of tumenol with 9 parts of a mixture of equal parts of alcohol, ether and water. In some instances the water is replaced with glycerin. Tumenol is made from mineral oil (bitumen and oleum). It is a sulphonated hydrocarbon.

#### Vinegar Cantharides.

Cantharides, 4 ounces; strong acetic acid, 4 fluid ounces; commercial acetic acid (sp. gr. 1.044), 16 fluid ounces; macerate as before, for 14 days.

#### Vinegar Cantharides.

Cantharides, 3 ounces; euphorbium, ½ ounce; acetic acid, 5 fluid ounces; pyroligneous acid, 15 fluid ounces; macerate a week.

#### Koussin.

Mix the powdered koussou with 2 per cent of its weight of slaked lime, and exhaust first with alcohol of 80 degrees Tralles, then with boiling water. The filtered fluids are mixed, the alcohol distilled off, the residue acidulated with acetic acid, and the resulting precipitate collected, washed with water and dried at a low temperature. This precipitate consists of koussin, tannin and resin. It is treated with excess of sodium bicarbonate, and the tannin and resin removed by extraction with chloroform. The residue is dissolved in water, acidulated with acetic acid—avoiding large excess, and the precipitated koussin is washed with water and crystallized from alcohol. Koussin has the characters of an acid, forming compounds with alkalies and with lead. It seems to be allied to santonin.

#### Essence Peppermint, to Improve the Color.

Have the peppermint herb ground to the proper fineness, then add enough water to moisten the herb, pack in a percolator and percolate with water until there is no red color in the percolate; then allow the water to all drip out of the percolator and continue the percolation with the alcohol; when the desired quantity is obtained, add the oil of peppermint to it and filter.

This process washes the red color of the stems out of the ground herb and leaves the pure green color of chlorophyll in the finished product. The old way of coloring, the preparation soon turns a dingy brown; the new method will always retain its color.



**Vinegar Cantharides.**

Cantharides, in powder, 2; glacial acetic acid, 2; acetic acid (28 per cent), 18, or a sufficiency; add the glacial acetic acid to 13 of acetic acid, and in this mixture digest the cantharides for 2 hours at a temperature of 200° F.; when cold, place them in a percolator, and when the liquid ceases to drop, pour over the residuum the remaining 5 ounces of acetic acid, and when the percolation is finished, press and make the whole liquid up to 20.

**Ointment of Tumenol.**

Tumenol .....	1 dram
Oxide of zinc.....	30 grains
Subnitrate of bismuth....	30 grains
Cold cream .....	5 ounces
Simple ointment .....	5 ounces

Mix.

**Vinegar Cantharides.**

Cantharides in powder, 2 ounces; acetic acid, 1 pint; macerate, with agitation, for 8 days, then press and strain.



# PART TWO.

## Toilet Preparations, Tooth Powders.

### Toilet Preparations, Tooth Powders.

The principal constituent of most tooth powders is precipitated chalk. It produces sufficient abrasion to remove all foreign substances without injuring the enamel of the teeth. Prepared chalk is inferior, but may be used for so-called "soft teeth" that have lost part or all of their enamel. Heavy magnesium carbonate is also used, and possesses about the same abrasive properties as chalk.

### To Produce More Abrasion.

Many substances are added to precipitated chalk in order to produce more abrasion. Powdered cuttlefish bone is an excellent adjunct for this purpose, especially where the formation of tartar is abundant. Pumice stone in fine powder is often added; but it should be used with great care, as it is apt to injure the enamel. Vegetable powders of all kinds are also used, partly for their abrasive qualities, partly for their odor or antiseptic properties.

### Other Additions to Tooth Powders.

Soap is liked by many and there are many saponaceous tooth powders in the market. Alkalis of various natures, as bicarbonate of soda, are used wherever an alkaline action is wanted. On the other hand, acid tooth powders are often needed; in that case the addition of an acid salt like cream of tartar is advisable. Lately, calcium peroxide is much used, its effectiveness being due, it is claimed, to the liberation of oxygen when moistened. Particular whitening properties are claimed for it. Some specialists also highly recommend potassium chlorate, claiming for it certain sanitary properties.

### Color of Tooth Powders.

Various colors are recommended for tooth powders, although it seems unnecessary to add any coloring matter, a clean white powder being preferable. In adding coloring, care must be taken to triturate the coloring material very thoroughly with the chalk, taking a little of the coloring agent first and gradually adding more. Unless long and thorough trituration is employed, the color is apt to appear in fine spots when the powder is moistened.

### Red or Pink Color for Tooth Powders.

Carmine ..... ½ ounce  
Ammonia water ..... 8 ounces  
Water, enough to make... 1 pint

Dissolve the carmine in the ammonia water in a mortar and gradually add the water. Filter. A few drops of this solution are sufficient to impart a pretty pink color to an ounce of powder.

### Red or Pink Color for Tooth Powders.

Brazil wood ..... 2 ounces  
Water ..... 2 pints  
Alum ..... 2 drams

Boil the wood in the water for ten minutes, filter, add the alum dissolved in a little boiling water, collect the precipitate on a filter, dry and powder.

### Brown Color for Tooth Powder.

Ammonia water ..... 1 ounce  
Tincture of catechu..... 6 ounces  
Mix.

### Yellow or Golden Color for Tooth Powder.

Tincture of Spanish saffron, made by macerating 2 ounces of saffron in a pint of diluted alcohol and filtering. This imparts a beautiful golden tint when added to the powder.

### Yellow Color for Tooth Powders.

Azo-orange aniline..... 1 dram  
Diluted alcohol ..... 4 ounces  
Dissolve.

### Green Color for Tooth Powders.

Add a few drops of a solution of aniline blue to the yellow colored tooth powder.

### Green Color for Tooth Powders.

Chlorophyll ..... 1 dram  
Ether ..... 1 ounce  
Dissolve.

### Violet Color for Tooth Powders.

Violet aniline ..... 1 dram  
Alcohol ..... 1 ounce  
Dissolve.

### Perfume for Tooth Powders.

The perfume of tooth powders should be delicate and lasting, leaving a refreshing antiseptic taste after using. Oil of peppermint, or menthol spirit, is generally used for this purpose, but many other aromatic oils are added, to round off the perfume and increase its delicacy. An abundance of perfume in a tooth powder is always a mistake.

### Perfume for Tooth Powder.

Oil of peppermint ..... 1 ounce  
Oil of wintergreen ..... 2 ounces  
Mix.

### Perfume for Tooth Powder.

Oil of peppermint ..... 1 ounce  
Oil of wintergreen ..... 1 ounce  
Oil of lavender ..... 1 dram  
Mix.

### Perfume for Tooth Powder.

Oil of rose imparts a pleasant perfume to the powder, if used in small quantities. One drop to the ounce of powder is sufficient. Larger additions give a bad taste.

### Perfume for Tooth Powder.

Oil of lemon ..... 6 drams  
Oil of bergamot ..... 3 drams  
Oil of sweet orange..... 3 drams  
Oil of neroli ..... 1 dram  
Mix.

### Perfume for Tooth Powder.

Oil of peppermint ..... 1 ounce  
Oil of wintergreen ..... ½ ounce  
Oil of cinnamon ..... 2 drams  
Oil of cloves ..... 1 dram  
Tincture of tolu..... 1 ounce  
Chloroform ..... 1 ounce  
Alcohol, enough to make.. 8 ounces

**Sifting Tooth Powders.**

After long and thorough trituration in a mortar the powder should be sifted twice (or more times) through a very fine sieve, the bulky parts remaining in the sieve being rejected. The finer the sieve, the more perfect the powder will be.

**Acid Dentifrice.**

Potassium bitartrate.....	6 ounces
Sugar of milk.....	6 ounces
Carminc .....	5 grains
Oil of peppermint.....	15 drops

Triturate the carmine thoroughly with a little of the sugar, add more sugar, then the oil and finally the cream of tartar. Sift.

**Acid Dentifrice (Wiener Zahnpulver).**

Cream tartar.....	1 ounce
Sugar of milk.....	1 ounce
Florentine orris root.....	1 dram
Oil of peppermint.....	5 drops

Mix and sift.

**Acid Tooth Powder.**

Venetian talc.....	4 ounces
Cream of tartar.....	1 ounce
Carminc .....	5 grains
Essence of menthol.....	15 drops

Mix and sift as in making acid dentifrice.

**Alkaline Tooth Powder.**

Venetian talc.....	4 ounces
Sodium bicarbonate.....	1 dram
Carminc .....	5 grains
Essence of menthol.....	15 drops

Mix.

**Alkaline Tooth Powder.**

Sodium bicarbonate.....	1 ounce
Talc .....	1 ounce
Armenian bole.....	1 ounce
Oil of peppermint.....	15 drops

Mix and sift.

**Alkaline Tooth Powder.**

Precipitated chalk.....	1 ounce
Calcined magnesium.....	1 ounce
Powdered cinchona.....	1 ounce
Oil of peppermint.....	5 drops

Mix and sift.

**Alkaline Tooth Powder.**

Sodium bicarbonate.....	½ ounce
Precipitated chalk.....	10 ounces
Carminc .....	6 grains
Oil of rose .....	10 drops
Oil of cloves .....	10 drops

Mix and sift.

**Alkaline Tooth Powder.**

Sodium bicarbonate.....	2 ounces
Powdered borax.....	3 ounces
Powdered soap.....	3 ounces
Chalk .....	12 ounces
Otto of rose.....	20 drops

Mix and sift.

**Antiseptic Dentifrice.**

Powdered orris .....	3 drams
Powdered licorice root.....	2 drams
Powdered castile soap.....	6 drams
Precipitated chalk .....	1 ounce
Boric acid .....	2 drams
Benzoic acid .....	3 drams
Magnesium carbonate,	
heavy, to make.....	4 ounces
Oil of eucalyptus .....	20 minims
Oil of rose virgin .....	5 minims
Oil of peppermint .....	5 minims
Oil of lemon .....	10 minims

Mix in order and pass through fine sieve. If color is desired, add 20 grains carmine.

**Antiseptic Tooth Powder.**

Resorcin .....	½ ounce
Salol .....	1 ounce
Powdered orris root.....	10 ounces
Chalk .....	2 ounces

Mix and sift.

**Antiseptic Tooth Powder.**

Powdered boric acid.....	40 grains
Powdered potassium chlorate .....	30 grains
Powdered guaiac .....	20 grains
Chalk .....	1 dram
Otto of rose.....	1 drop
Heavy calcined magnesia,	
enough to make.....	1 ounce

**Antiseptic Tooth Powder.**

Powdered soap .....	2 drams
Powdered orris root.....	½ ounce
Powdered borax .....	2 drams
Chalk .....	2 ounces
Carbolic acid.....	10 drops
Oil of eucalyptus.....	10 drops

Mix.

**Antiseptic Tooth Powder.**

Powdered soap.....	1 ounce
Carbolic acid .....	½ dram
Oil of eucalyptus.....	½ dram
Chalk .....	7 ounces

Mix and sift.

**Antiseptic Tooth Powder.**

Borax, powdered.....	1 ounce
Chalk .....	2 ounces
Powdered myrrh .....	½ ounce
Powdered orris root.....	½ ounce
Powdered cinnamon .....	½ ounce

**Aromatic Dentifrice.**

Magnesium carbonate,	
heavy .....	7 ounces
Precipitated chalk.....	24 ounces
Powdered orris .....	4 ounces
Powdered castile soap.....	4 ounces
Carminc .....	20 grains
Oil of cloves, Eng.....	2 drams
Oil of cinnamon, true.....	1 dram
Oil of origanum .....	50 minims
Oil of rose geranium.....	1 dram
Oil of rose virgin.....	1 dram
Essence of musk.....	1 dram

Mix and pass through sieve several times.

**Aromatic Tooth Powder.**

Camphor, in fine powder..	1 ounce
Powdered cuttlefish bone.....	1½ ounces
Powdered orris root.....	1 ounce
Chalk .....	8 ounces
Oil of pimento .....	8 drops
Oil of cloves .....	4 drops
Oil of cinnamon .....	4 drops
Otto of rose.....	2 drops
Oil of caraway .....	1 drop

Mix the cuttlefish, camphor and orris root. Triturate the perfume with a little of the chalk, add the remainder and mix all together. Sift three times.

**Astringent Tooth Powder.**

Precipitated chalk.....	8 ounces
Powdered orris root.....	½ ounce
Powdered myrrh .....	½ ounce
Sodium bicarbonate.....	1 ounce
Powdered soap .....	½ ounce
Oil of peppermint .....	15 minims
Oil of lemon .....	1 fl. dram
Oil of coriander .....	15 minims

Mix and sift.



**Asiatic Dentifrice.**

Prepared corals .....	1 ounce
Venetian red .....	$\frac{1}{2}$ dram
Ochre .....	1 dram
Pumice stone .....	1 dram
Musk .....	1 grain
Powder and mix.	

**Asiatic Dentifrice.**

Bole .....	3 ounces
Chalk .....	2 ounces
Ochre .....	1 ounce
Pumice stone .....	1 ounce
Musk .....	3 grains

**Astringent Tooth Powder.**

Cream tartar.....	1 ounce
Florentine orris root.....	1 ounce
Exsiccated alum.....	1 dram
Cochineal .....	$\frac{1}{2}$ dram
Oil of rose.....	3 drops
Mix and sift.	

**Carbolic Tooth Powder.**

Chalk .....	1 ounce
Powdered soap .....	$\frac{1}{2}$ dram
Carbolic acid .....	3 drops
Camphor .....	3 grains
Oil of wintergreen .....	2 drops

Rub the camphor and carbolic acid with a little chalk, add the oil, then gradually the other ingredients. Mix and sift.

**Jules Felix's Dentifrice.**

Calcium carbonate (finest powdered) .....	1 ounce
Boric acid .....	25 grams
Salicylic acid .....	25 grains
Powdered dragon's blood..	10 grains
Essence of spearmint....	10 drops
Mix and sift.	

**Preservative Tooth Powder.**

Calcium carbonate precipitated .....	750 grains
Magnesium carbonate.....	28 grains
Borax, powdered.....	30 grains
Almond soap, powdered..	250 grains
Orris root, powdered.....	76 grains
Thymol .....	1 grain
Camphor .....	5 grains
Oil peppermint.....	50 drops
Oil cloves.....	25 drops
Oil lemon.....	25 drops
Oil eucalyptus.....	25 drops
Creosote or carbolic acid..	10 drops

Mix the powders thoroughly. Dissolve the thymol and camphor in enough alcohol and add the oils and acid. Triturate with  $\frac{1}{2}$  ounce of the mixed powders, gradually add the remainder. Mix all well and sift twice.

**Mialhe's Tooth Powder.**

Sugar of milk.....	4 ounces
Lake .....	20 grains
Tannin .....	30 grains
Oil of mint,	
Oil of anise,	
Oil of neroli, of each sufficient to flavor to taste.	

Rub the tannin and lake well together, and gradually add the sugar of milk, previously powdered and sifted, and lastly the essential oils. Mix and sift.

**Cinchona Tooth Powder.**

Chalk .....	3 ounces
Powdered cinchona .....	1 ounce
Powdered myrrh .....	$\frac{1}{2}$ ounce
Powdered cloves .....	2 drams
Oil of cinnamon.....	5 drops
Mix well and sift.	

**Thymol Dentifrice.**

Precipitated chalk .....	15 ounces
Soap, powdered .....	1 ounce
Saccharin .....	10 grains
Thymol .....	15 grains
Camphor .....	30 grains
Vanillin .....	5 grains
Oil of rose.....	6 drops

Rub the camphor and thymol together in a mortar, then add the chalk in small portions at a time, reserving about 1 ounce; next add the other ingredients, mix the perfume with the reserved chalk, then mix all together and sift.

**Lemon Tooth Powder.**

Chalk .....	4 ounces
Powdered sugar of milk..	$\frac{1}{2}$ ounce
Powdered orris root.....	1 ounce
Powdered cuttlefish bone..	$\frac{1}{2}$ ounce
Sodium bicarbonate.....	$\frac{1}{2}$ ounce
Oil of lemon.....	$\frac{1}{2}$ dram
Mix well and sift.	

**Naphthol Dentifrice.**

Precipitated chalk .....	7 $\frac{1}{2}$ ounces
Powdered orris root.....	7 $\frac{1}{2}$ ounces
Beta naphthol.....	3 drams
Powdered soap .....	2 $\frac{1}{2}$ ounces
Powdered sugar .....	1 $\frac{1}{2}$ ounces
Carmin .....	30 grains
Oil of lavender .....	1 fl. dram
Oil of lemon .....	1 fl. dram
Oil of bergamot .....	1 fl. dram
Oil of gaultheria .....	30 minims
Oil of rose .....	10 minims
Mix and sift.	

**Salol Tooth Powder.**

Calcium carbonate, precipitated .....	4 ounces
Sugar of milk, powdered..	$\frac{1}{2}$ ounce
Orris root, powdered.....	1 dram
Pumice, powdered.....	1 dram
Salol, powdered.....	1 dram
Oil of peppermint .....	10 drops
Oil of geranium .....	2 drops
Oil of star anise .....	1 drop
Oil of cloves .....	1 drop
Mix and sift.	

**Salol Tooth Powder.**

Salol .....	1 dram
Powdered sepia.....	2 drams
Prepared chalk.....	1 ounce
Magnesium carbonate.....	$\frac{1}{2}$ ounce
Powdered sugar.....	$\frac{1}{2}$ ounce
Mix and sift.	

**Tooth Powder with Salicylic Acid (Red).**

Sodium salicylate.....	$\frac{1}{4}$ ounce
Sugar of milk.....	1 ounce
Sodium bicarbonate.....	1 ounce
Orris root.....	1 ounce
Red saunders.....	1 ounce
Oil of peppermint.....	15 drops
Mix and sift.	

**Court Dentifrice.**

Chalk .....	6 ounces
Carmin .....	12 grains
Otto of rose.....	5 drops
Oil of pimento .....	5 drops
Oil of cloves .....	5 drops
Oil of cinnamon .....	2 drops
Oil of lemon .....	2 drops
Musk .....	1 grain

Triturate the musk and the carmin with  $\frac{1}{2}$  ounce of chalk, add the oils, triturate for 10 minutes and add the remainder of the chalk. Mix and sift. This is an exceedingly fine powder.

**Tooth Powder with Salicylic Acid (White).**

Sodium salicylate.....	¾ ounce
Sugar of milk.....	1 ounce
Sodium bicarbonate.....	1 ounce
Orris root.....	1 ounce
Talc, prepared.....	1 ounce
Oil of peppermint.....	15 drops

Mix and sift.

**Rhatany Tooth Powder.**

Rhatany root.....	2 ounces
Cuttlefish bone.....	4 ounces
Prepared chalk.....	8 ounces
Borax.....	1 dram

Perfume, as desired.

Mix and sift.

**Rhatany Dentifrice.**

Powdered orris root.....	6 ounces
Powdered cuttle bone.....	6 ounces
Powdered chalk precipitate.....	24 ounces
Powdered krameria.....	9 ounces
Carmine.....	1½ drams
Borax.....	3 drams
Antimonial powder.....	6 drams
Oil of rose virgin.....	24 drops
Oil of neroli.....	16 drops
Oil of cedrat.....	8 drops
Oil of cinnamon.....	8 drops
Oil of cloves.....	8 drops
Oil of lavender, Eng.....	4 drops
Oil of pimento.....	4 drops
Tincture of myrrh.....	6 drams
Extract of violet.....	6 drams
Magnesium carbonate, heavy.....	6 ounces

Mix and pass through sieve several times.

**Eugenol Tooth Powder.**

Cocaine hydrochloride.....	2 grains
Eugenol.....	16 drops
Sugar of milk.....	1 ounce
Chalk.....	1 ounce
Calcium phosphate.....	2 ounces

Mix well and sift twice.

**Tannin Dentifrice.**

Sugar of milk.....	4 ounces
Carmine.....	10 grains
Tannin.....	½ dram
Oil of peppermint.....	2 drops
Oil of anise.....	4 drops
Oil of neroli.....	2 drops

Triturate the carmine with the tannin, add the sugar of milk gradually, and finally the oils. Sift twice.

**Betton's Dentifrice.**

Powdered cuttlefish bone.....	4 pounds
Powdered orris root.....	4 pounds
Prepared chalk.....	1 pound
Musk.....	8 grains
Oil of rose.....	48 drops
Oil of lavender (Mitcham).....	48 drops
Carmine, No. 40.....	2 drams
Ammonia water.....	5 fl. drams
Water.....	6 fl. ounces

Rub the carmine with the ammonia, diluted with water, and with this solution imbue the prepared chalk and powdered cuttlefish bone. Allow the mixture to become dry, add the orris root, perfumed with the essential oils, mix, and sift.

**Black Tooth Powder.**

Wood charcoal, in fine powder.....	28 parts
Oyster shell, powdered.....	4 parts
Orris root, powdered.....	4 parts
Catechu, powdered.....	2 parts
Cinnamon, powdered.....	2 parts
Myrrh, powdered.....	1 part

Mix and sift.

**Black Tooth Powder.**

Wood charcoal, in fine powder.....	4 parts
Cinchona bark.....	1 part
Oil of cloves, sufficient quantity.	

Mix and sift.

**Red Tooth Powder.**

Cinchona, in fine powder..	4 parts
Sandalwood, in fine powder.....	8 parts
Alum.....	1 part
Oil of bergamot and oil of cloves, equal parts, sufficient quantity.	

**Naysmith Tooth Powder.**

Chalk.....	4 ounces
Powdered orris root.....	1 ounce
Red bole.....	¼ ounce

Mix and sift.

This powder is often perfumed with otto of rose.

**Willow Bark Dentifrice.**

Powdered willow bark,	
Powdered charcoal, each..	½ ounce
Powdered myrrh.....	2 drams
Balsam of peru.....	½ scruple
Oil of cinnamon.....	3 drops

Triturate well together and sift.

**Myrrh Tooth Powder.**

Chalk.....	4 ounces
Powdered myrrh.....	½ ounce
Powdered soap.....	½ ounce
Powdered orris.....	1 ounce
Oil of peppermint.....	10 drops

Mix and sift.

**Camphorated Chalk.**

Precipitated chalk.....	½ pound
Powdered orris root.....	¼ pound
Powdered camphor.....	½ pound

Reduce the camphor to a powder by rubbing it in a mortar with a few drops of alcohol; then sift the whole well together.

**Camphorated Saponaceous Dentifrice.**

Precipitated chalk.....	3 ounces
Powdered castile soap.....	2 ounces
Magnesium carbonate.....	1 ounce
Powdered camphor.....	2 drams
Oil of peppermint.....	15 drops

(This powder is similar to Brown's Camphorated Saponaceous Dentifrice.)

Mix and sift.

**Cartwright's Tooth Powder.**

Prepared chalk.....	3 ounces
Orris root.....	2 ounces
Castile soap.....	1½ drams

Powder and mix.

**Citroleine Dentifrice.**

Precipitated chalk.....	1 pound
Powdered sugar.....	2 ounces
Powdered orris.....	4 ounces
Cuttlefish bone.....	2 ounces
Sodium bicarbonate.....	2 ounces
Oil of lemon.....	2 drams

First tint the precipitated chalk with a concentrated tincture of saffron, and then spread on paper to dry. Then take the soft portion of the cuttlefish bone which can be scraped off with a knife, place in a mortar with the sugar, rub well down to a fine powder. To this gradually add the powdered orris root, sodium bicarbonate and oil of lemon. Mix thoroughly, then gradually incorporate with the chalk by working in a mortar or mixer and sifter.

**Columbian Dentifrice.**

Calcium carbonate, pre-	
cipitated .....	8 ounces
Castile soap, powdered....	1 ounce
Cuttlefish bone, powdered,	
Orris root, powdered, of	
each .....	4 drams
Oil of wintergreen.....	½ fl. dram
Prepared coloring.....	½ ounce

Mix the prepared coloring with the precipitated chalk by trituration, sift through an ordinary sieve and set in a warm place to dry. Mix the soap, fish bone and orris root; to this add the oil of wintergreen and lastly the colored chalk. Run through a fine bolting cloth, or sieve.

**Crown Tooth Powder.**

Powdered cuttlebone .....	15 parts
Powdered borax .....	5 parts
Powdered castile soap....	5 parts
Powdered sugar .....	15 parts
Powdered orris root (Flor.)	10 parts
Calcium carbonate, pre-	
cipitated .....	50 parts
Oil of wintergreen.....	3 parts

Rub up the oil of wintergreen with the precipitated carbonate of lime; when thoroughly mixed, add the other ingredients, mix well and sift.

**Peerless Record Dentifrice.**

Calcium carbonate, pre-	
cipitated .....	750 grains
Magnesium carbonate.....	28 grains
Sodium borate, powdered..	30 grains
Sodium bicarbonate, pow-	
dered .....	250 grains
Orris root, powdered.....	76 grains
Thymol, powdered.....	1 grain
Camphor .....	5 grains
Oil of peppermint .....	2 drops
Oil of cloves .....	1 drop
Oil of lemon .....	1 drop
Creosote .....	1 drop
Oil of eucalyptus .....	1 drop

Dissolve thymol and camphor in sufficient alcohol to effect solution and add to the previously well-mixed powders, then add the rest of the ingredients, mix well together, and sift several times.

**Charcoal Dentifrice.**

Powdered myrrh .....	½ ounce
Powdered benzoin .....	½ ounce
Powdered soap .....	1 ounce
Willow charcoal, powdered	2 ounces
Carbolic acid.....	1 dram
Precipitated chalk.....	4 ounces
Oil of wintergreen .....	3 drops
Oil of peppermint .....	6 drops

**O. K. Tooth Powder.**

Precipitated chalk.....	4 ounces
Powdered myrrh .....	¼ ounce
Powdered castile soap,	
white .....	½ ounce
Powdered orris root.....	½ ounce
Oil of peppermint.....	

Mix and sift.

**Dentamenel.**

Saccharin .....	24 grains
Sodium bicarbonate.....	24 grains
Chalk, precipitated.....	12 ounces
Magnesium carbonate....	3 drams
Soap, powdered.....	9 drams
Orris .....	9 drams
Thymol .....	24 grains
Carmine .....	24 grains
Oil of geranium .....	24 minims
Oil of gaultheria .....	12 minims

Rub the thymol and carmine with the magnesium carbonate and add the essential oils;

then the chalk and the orris. Lastly the soap. Pass through a sieve and add the saccharin and sodium bicarbonate and again pass through a fine sieve.

**Diamond Tooth Powder.**

Precipitated chalk.....	3 pounds
Powdered myrrh .....	4 ounces
Powdered sugar .....	1 pound
Powdered white castile	
soap .....	8 ounces
Oil of wintergreen, sufficient.	

Mix and sift.

**Talc Dentifrice.**

Talc .....	2 ounces
Cream tartar.....	72 grains
Burnt alum.....	78 grains
Cochineal .....	156 grains
Essence of mint.....	20 drops

Mix and sift.

**Talc Tooth Powder.**

Talc .....	1 ounce
Bicarbonate of soda.....	1 dram
Orris root, powdered.....	1 dram
Oil of peppermint.....	3 drops

Mix and sift.

**Florentine Dentifrice.**

Prepared oyster shells....	14 drams
Orris .....	6 drams
Cream of tartar.....	3 drams
Color and perfume.	

Mix and sift.

**Deschamp's Alkaline Tooth Powder.**

Sugar .....	1 ounce
Wood charcoal .....	1 ounce
Peruvian bark .....	½ ounce
Cream of tartar.....	1½ drams
Cinnamon .....	½ grain

Powder fine, mix and sift.

**Sulphur Tooth Powder.**

Washed sulphur.....	1 ounce
Chalk .....	3 ounces
Perfume to suit.	

Mix and sift.

**Sulphur Dentifrice.**

Washed sulphur .....	1 pound
Precipitated chalk .....	3 pounds
Calcium phosphate, pre-	
cipitated .....	1 pound
Powdered soap .....	10 ounces
Mix thoroughly, and flavor with a sufficient	
quantity of the following mixture:	
Oil of wintergreen .....	45 minims
Oil of peppermint .....	45 minims
Oil of cinnamon .....	30 minims

A sufficient amount of the mixed oils should be dissolved in 4 times the quantity of petroleum ether and the whole added to the precipitated chalk and thoroughly incorporated, and sift all powder dentifrices through a No. 60 sieve.

**Peruvian Bark Dentifrice.**

Powdered Peruvian bark..	1½ ounces
Powdered saunders .....	½ ounce
Oil of bergamot .....	2 drops
Oil of cloves .....	2 drops

Mix and sift.

**Peruvian Bark Dentifrice.**

Powdered Peruvian bark..	3 ounces
Powdered cream tartar....	½ ounce
Powdered sage leaves....	½ ounce
Powdered myrrh .....	½ ounce
Powdered catechu .....	6 drams
Oil of cloves .....	16 drops

Mix and sift.



**Victoria Dentifrice.**

Precipitated chalk.....	8 ounces
Powdered cuttle bone.....	6 ounces
Powdered soap .....	$\frac{1}{2}$ ounce
Borate of soda.....	$\frac{1}{2}$ ounce
Powdered orris root.....	$\frac{1}{2}$ ounce
Powdered sugar .....	2 ounces
Carbolic acid (95 per cent)	10 minims
Oil of gaultheria.....	1 fl. dram
Solution of carmine, N. F.	1 fl. dram
Water .....	3 fl. drams

Add the water to the carmine solution and triturate in divided portions with the chalk. Set aside in a warm place to dry and add the cuttlefish bone; then incorporate the soap, borax, orris root and sugar; mix well, add flavoring, and lastly sift.

**Peruvian Bark Dentifrice.**

Powdered Peruvian bark..	1 ounce
Powdered orris root.....	$\frac{1}{2}$ ounce
Powdered sage leaves.....	$\frac{1}{2}$ ounce
Powdered myrrh .....	$\frac{1}{2}$ ounce

Perfume as desired.  
Mix and sift.

**Peruvian Bark Dentifrice.**

Powdered Peruvian bark..	2 ounces
Powdered ammonium chloride .....	$\frac{1}{2}$ ounce
Powdered orris root.....	1 ounce
Powdered catechu .....	6 drams
Powdered myrrh .....	6 drams
Oil of cloves.....	5 drops

Mix and sift.

**Peruvian Bark Tooth Powder.**

Powdered Peruvian bark.	1 ounce
Chalk .....	2 ounces
Orris root .....	1 ounce
Oil of peppermint .....	5 drops
Oil of cloves .....	2 drops
Oil of cinnamon .....	2 drops

Mix and sift.

**Peruva Dentifrice.**

Precipitated chalk.....	1 ounce
Powdered cuttlefish bone. $\frac{1}{2}$	ounce
Red cinchona bark.....	1 dram
White castile soap.....	1 dram
Powdered cassia .....	$\frac{1}{4}$ dram
Powdered camphor .....	$\frac{1}{4}$ dram
Oil of lavender flowers...	5 minims
Oil of sassafras .....	5 minims

Mix and sift twice.

**Quinine Tooth Powder.**

Precipitated calcium carbonate .....	29 av. ounces
Orris root .....	$3\frac{1}{2}$ av. ounces
Sugar of milk.....	$3\frac{1}{2}$ av. ounces
Saccharin .....	4 grains
Pumice stone .....	390 grains
Magnesium carbonate.....	390 grains
Tannic acid.....	300 grains
Quinine hydrochloride.....	80 grains
Oil of rose .....	16 drops
Oil of peppermint .....	8 drops
Oil of ylang ylang.....	5 drops
Oil of almonds, essential.	5 drops

Mix and sift.

**Quinine Tooth Powder.**

Powdered orris root.....	1 ounce
Chalk .....	3 ounces
Powdered cuttlefish bone..	$\frac{1}{4}$ ounce
Quinine sulphate.....	10 grains
Powdered soap.....	1 dram
Oil of rose geranium.....	5 drops
Oil of cinnamon .....	5 drops

Mix and sift.

**Quinine Tooth Powder.**

Sulphate of quinine.....	30 grains
Powdered starch .....	$\frac{1}{4}$ pound
Powdered orris root.....	$\frac{1}{4}$ pound
Precipitated chalk.....	$\frac{1}{2}$ pound

Triturate thoroughly, and sift.

**Quinine (Regnaud's) Dentifrice.**

Calcined magnesia.....	1 ounce
Quinine sulphate.....	8 grains
Carmine (or cochineal), q. s.	
Oil of peppermint.....	3 drops

Mix and sift.

**Quinine (Saunders') Dentifrice.**

Prepared chalk .....	2 ounces
Cuttlefish bone .....	1 ounce
Orris .....	1 ounce
Myrrh .....	$\frac{1}{2}$ ounce
Quinine sulphate .....	10 grains

Mix and sift.

**Jamet's Dentifrice.**

Orris .....	16 ounces
Pumice stone .....	8 ounces
Magnesia .....	4 ounces
Cuttlefish bone .....	8 ounces
Quinine sulphate .....	4 ounces
Cascarilla .....	1 ounce
Sugar of milk.....	16 ounces
Oil of mint .....	1 dram
Oil of cinnamon .....	$\frac{1}{2}$ dram
Oil of neroli .....	$\frac{1}{2}$ dram
Essence of ambergris.....	1 dram

Mix and sift.

**Brown Tooth Powder.**

Powdered cinchona, pale..	2 ounces
Powdered myrrh .....	1 ounce
Precipitated chalk (Eng.).	1 pound
Armenian bole .....	2 ounces
Oil of wintergreen.....	20 drops

Triturate thoroughly, then sift through a fine sieve.

**Cinchona Tooth Powder.**

Cinchona, powdered.....	4 parts
Charcoal, powdered.....	4 parts
Myrrh, powdered.....	2 parts
Potassium bitartrate.....	1 part

Perfume, mix and sift.

**Pumice Stone Tooth Powder.**

Pumice .....	1 ounce
Prepared oyster shell.....	1 ounce
Sodium bicarbonate.....	1 ounce
Orris root .....	1 ounce
Sugar of milk.....	1 ounce

Mix, then add:

Vanillin .....	5 grains
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Mix well and sift.

**Improved Tooth Powder.**

Boric acid.....	4 ounces
Resin of guaiac.....	2 ounces
Carbonate of calcium.....	6 ounces
Otto of roses.....	3 drops
Potassium chlorate.....	6 ounces

Powder the potassium chlorate separately and carefully, and add after the other ingredients are mixed. Then sift.

**Star Tooth Powder.**

Magnesium carbonate, heavy .....	$1\frac{1}{2}$ ounces
Chalk .....	$1\frac{1}{2}$ ounces
Sodium chloride.....	$\frac{1}{2}$ ounce
Oil of star anise.....	10 drops

Mix and sift.

**Lavender Tooth Powder.**

Crimson lake..... 1 dram  
 Chinese blue (or Turn-  
 bull's blue)..... 1 scruple  
 Mix, and add:  
 Sodium bicarbonate.....  $\frac{1}{2}$  ounce  
 Cuttlefish bone..... 2 ounces  
 Precipitated chalk..... 6 ounces  
 Oil of lavender..... 8 drops  
 Mix and sift.

**Imperial Tooth Powder.**

Precipitated chalk..... 8 ounces  
 Powdered castile soap.... 1 ounce  
 Powdered cuttlefish bone..  $\frac{1}{2}$  ounce  
 Powdered orris root.....  $\frac{1}{2}$  ounce  
 Oil of wintergreen.....  $\frac{1}{2}$  fl. dram  
 Prepared coloring, q. s. to suit.

**Prepared coloring:**

Carmine, No. 40.....  $\frac{1}{2}$  ounce  
 Water ..... 8 ounces  
 Ammonia water..... 8 ounces

Triturate the carmine with the ammonia,  
 add the water and filter.

To the chalk add  $\frac{1}{2}$  ounce of the coloring  
 by trituration, sift through an ordinary sieve  
 and set in a warm place until thoroughly  
 dry. Mix the soap, cuttlefish bone and orris  
 root; to this add the oil of wintergreen, then  
 add the colored chalk. Run all through  
 bolting cloth. (If pink color is not deep  
 enough add more prepared coloring before  
 sifting.)

**Columbian Dentifrice.**

Calcium carbonate, pre-  
 cipitated ..... 8 ounces  
 Castile soap, powdered... 1 ounce  
 Cuttlefish bone, powdered,  
 Orris root, powdered, of  
 each ..... 4 drams  
 Oil of wintergreen.....  $\frac{1}{2}$  fl. dram  
 Coloring, if desired.

Mix and sift.

**Saccharin Tooth Powder.**

Saccharin ..... 3 grains  
 Calamine, in fine powder. 30 grains  
 Chalk .....  $1\frac{1}{2}$  ounces  
 Oil of peppermint..... 3 drops

Mix and sift.

**Saccharin Tooth Powder.**

Saccharin ..... 6 grains  
 Magnesium carbonate,  
 heavy ..... 1 ounce  
 Cuttlefish bone..... 2 ounces  
 Otto of rose..... 2 drops  
 Carmine (if desired)..... 4 grains

Mix and sift.

**Orris Tooth Powder.**

Powdered orris root..... 1 ounce  
 Powdered sugar,  
 Powdered soap, of each...  $\frac{1}{4}$  ounce  
 Powdered cuttlefish bone.. 1 dram  
 Chalk ..... 5 ounces  
 Oil of wintergreen,  
 Oil of cloves,  
 Extract of musk, of each. 5 drops  
 Carmine (if desired)..... 10 grains

Incorporate the perfume with the chalk,  
 add the other ingredients, mix thoroughly  
 and sift.

**Vegetable Tooth Powder (Zieter's).**

Heavy calcined magnesia.  $1\frac{1}{2}$  ounces  
 Cuttlefish bone.....  $1\frac{1}{2}$  ounces  
 Powdered calamus root....  $\frac{1}{4}$  ounce  
 Powdered cassia bark.....  $\frac{1}{4}$  ounce  
 Powdered pellitory .....  $\frac{1}{4}$  ounce  
 Essence of vanilla ..... 15 drops  
 Essence of ambergris ..... 2 drops

Mix thoroughly and sift.

**Cuttlefish Tooth Powder.**

Powdered cuttlefish bone.. 1 ounce  
 Precipitated chalk..... 2 ounces  
 Powdered orris..... 1 ounce  
 Oil of lemon ..... 10 drops  
 Oil of neroli ..... 5 drops  
 Liquid carmine..... 10 to 15 drops

Mix the liquids with the chalk, add the  
 other ingredients and sift.

**Pearl Tooth Powder.**

Precipitated chalk..... 4 ounces  
 Powdered French chalk... 8 ounces  
 Powdered white soap..... 4 ounces  
 Powdered sugar ..... 4 ounces  
 Oil of wintergreen ..... 30 minims  
 Oil of cloves ..... 10 minims  
 Oil of rose ..... 10 minims

Tint with a few grains of carmine if de-  
 sired.

Mix well and sift.

**Rose Tooth Powder.**

Chalk ..... 3 ounces  
 Sugar of milk..... 1 ounce  
 Oil of rose geranium..... 4 drops  
 Liquid carmine..... 10 to 20 drops

**Rose Tooth Powder.**

Powdered sugar..... 1 ounce  
 Chalk ..... 1 ounce  
 Magnesium carbonate,  
 heavy ..... 2 ounces  
 Powdered cuttlefish bone.  $\frac{1}{2}$  ounce  
 Potassium bitartrate.....  $\frac{1}{2}$  ounce  
 Oil of peppermint ..... 10 drops  
 Oil of cassia ..... 5 drops  
 Tincture of ambergris... 5 drops  
 Oil of rose..... 10 drops  
 Liquid carmine..... 10 to 20 drops

Mix and sift.

**Rose Tooth Powder.**

Prepared chalk ..... 1 ounce  
 Precipitated chalk..... 1 ounce  
 Oil of rose..... 2 drops  
 French carmine..... 4 grains

Mix well and sift.

**Saponaceous Tooth Powder.**

Prepared chalk..... 4 ounces  
 Magnesium carbonate.... 4 ounces  
 Castile soap, powdered... 1 ounce  
 Oil of rose..... 6 drops

Mix well and sift.

**Saponaceous Dentifrice (Camphorated).**

Precipitated chalk..... 20 ounces  
 Powdered soap ..... 2 ounces  
 Powdered camphor ..... 2 ounces  
 Powdered sugar ..... 2 ounces  
 Oil of wintergreen ..... 1 fl. dram  
 Oil of sassafras .....  $\frac{1}{4}$  fl. dram  
 Oil of cloves ..... 10 drops  
 Extract of musk ..... 30 drops  
 Extract of vanilla ..... 30 drops

Reduce the camphor to a fine powder with  
 the aid of alcohol; add the remaining pow-  
 ders, mix well and incorporate the oils and  
 extracts, then sift.

**Oriental Tooth Powder (San Toy Tooth Powder).**

Powdered cuttlefish bone. 2 ounces  
 Sodium bicarbonate.....  $\frac{1}{2}$  ounce  
 Chalk ..... 10 ounces  
 Powdered dragon's blood.. 5 grains  
 Oil of peppermint...  $\frac{1}{2}$  dram  
 Otto of rose..... 8 drops

Mix well and sift.

**Myrrh Tooth Powder (Marshall's Tooth Powder) (Hudson's Tooth Powder).**

Powdered chalk .....	3 ounces
Powdered myrrh .....	1 ounce
Powdered orris root.....	1 ounce
Otto of rose.....	10 drops

Mix thoroughly and sift.

**Violet Tooth Powder.**

Precipitated chalk.....	6 ounces
Powdered cuttlefish bone..	3 ounces
Powdered orris root.....	1½ ounces
Extract of orris (perfume) ½ fl. dram	
Indigo, in fine powder, enough to color.	

Mix and sift.

**Winnipeg Special Tooth Powder.**

Precipitated chalk .....	16 ounces
Powdered pumice .....	2 ounces
Powdered soap .....	6 ounces
Powdered starch .....	6 ounces
Powdered sugar .....	6 ounces
Oil of neroli .....	20 drops
Oil of peppermint .....	30 drops
Oil of gaultheria .....	20 drops

Mix well and sift.

**Peroxide Tooth Powder.**

Magnesium peroxide .....	1 dram
Chalk .....	2 ounces
Oil of peppermint.....	4 drops

Mix and sift.

The use of calcium peroxide as an ingredient in this class of tooth powders is covered by United States patent.

**Peroxide Tooth Powder.**

Magnesium peroxide .....	2 drams
Chalk .....	1 ounce
Powdered orris root.....	1 ounce
Oil of peppermint .....	5 drops
Oil of rose .....	3 drops
Oil of cinnamon .....	1 drop
Oil of cloves .....	1 drop

Mix well and sift.

**Peroxide Tooth Powder.**

Magnesium peroxide .....	2 drams
Chalk .....	1 ounce
Powdered cuttlefish bone..	¼ ounce
Powdered soap .....	¼ ounce
Powdered sugar of milk....	¼ ounce
Liquid carmine .....	15 drops
Perfume, to suit.	

Mix well and pass through a fine sieve.

**Peroxide Tooth Powder.**

Magnesium peroxide .....	1 ounce
Magnesia calcined, heavy..	½ ounce
Orris root .....	½ ounce
Chalk .....	5 ounces
Oil of neroli .....	10 drops
Oil of lemon .....	5 drops
Oil of cinnamon .....	2 drops
Color, if desired.	

Mix and sift.

**To Clean the Teeth.**

Rub black or spotted teeth with cuttlefish bone made into a stiff mass by mixture with a 4 per cent solution of hydrogen peroxide. After using the mouth should be rinsed with water. In this way the teeth may be whitened in a few minutes, and it is said that the operation will not injure the enamel.

**TOOTH PASTES.****Tooth Pastes, or Creams.**

Tooth pastes or creams have become very popular and are preferred by many to powders. They are powders mixed with a sweet excipient, such as honey or simple syrup or glycerin. The saccharin excipients are more or less objectionable, unless the pastes are used quickly. Otherwise the sugar in them will gradually ferment and react on the other ingredients, giving rise to all kinds of changes. Glycerin alone is objectionable, because it attracts water too readily, and it should therefore be diluted with at least three times its volume of water. To obtain the proper consistency of the paste is merely a matter of experiment and practice and no special directions can be given. The filling of the tubes also requires much practice and is best done by means of small machines, consisting of a metal tube of proper size through which the paste is forced by means of a press. There are many of these machines in the market.

**Excipient for Tooth Paste.**

Saccharin .....	8 grains
Alcohol .....	1 ounce
Glycerin .....	3 ounces
Water .....	9 ounces
Gelatin .....	2 drams

Dissolve the gelatin in the water on a water bath. Dissolve the saccharin in the alcohol, add the glycerin, and mix the two solutions.

This is an ideal excipient and will answer all purposes, except when borax is part of the powder. In that case the glycerin may act on the borax, liberating boric acid, which in turn will set free carbonic acid gas from the chalk (calcium carbonate). In consequence the paste will become spongy.

**Floral Dentine.**

Powdered cuttlefish bone..	15 drams
Powdered prepared chalk..	5 ounces
Powdered orris, Florentine	20 grains
Carmin .....	5 grains
Oil of lemon .....	70 drops
Oil of rose geranium.....	40 drops
Honey, strained.....	10 drams
Syrup .....	5 ounces
Glycerin .....	1 ounce

Triturate the solid ingredients to a fine powder, add the oils, then the syrup, glycerin and honey, and thoroughly mix.

**Areca Tooth Paste.**

Chalk .....	2 ounces
Armenian bole.....	6 drams
Powdered areca.....	3 drams
Saccharin .....	5 grains
Oil of cloves .....	4 drops
Oil of cinnamon .....	3 drops
Glycerin .....	½ ounce
Rose water, enough to make a paste.	

Proceed as under "Antiseptic Dental Cream."

**Antiseptic Dental Cream.**

Precipitated chalk .....	5 drams
Powdered white castile soap .....	1 dram
Sodium salicylate .....	30 grains
Oil of rose geranium.....	4 drops
Oil of wintergreen .....	3 drops
Solution of carmine.....	2 drops
Glycerin, 1 part,	
Water, 4 parts.....	q. s.

Triturate the powders, add the oils, continue trituration until well mixed, and pass through a fine sieve. Then make into a paste of the desired consistency with gly-



cerin and water mixed in the above proportion; add the solution of carmine and rub all together until a smooth, creamy paste results.

The above directions are to be followed in all formulas for tooth powders, unless special methods are given.

#### Astringent Tooth Paste.

Precipitated chalk .....	2 ounces
Powdered myrrh .....	$\frac{1}{2}$ ounce
Powdered rhatany .....	$\frac{1}{2}$ ounce
Powdered cuttlefish bone..	$\frac{1}{2}$ ounce
Powdered orris .....	3 drams
Glycerin .....	1 part
Honey .....	4 parts

Mix glycerin and honey in the proportion of 1 to 4. Beat into a paste after the addition of some suitable flavor.

#### Aluminum Tooth Paste.

Precipitated aluminum hydrate .....	6 ounces
Precipitated chalk .....	9 ounces
Magnesia .....	1 ounce
Oil of lavender .....	$\frac{1}{2}$ ounce
Oil of sassafras .....	$\frac{1}{2}$ ounce
Glycerin and water, sufficient to form a paste.	

Proceed as under "Antiseptic Dental Cream."

#### Antiseptic Tooth Paste.

Precipitated chalk .....	8 ounces
Powdered soap .....	4 ounces
Powdered sugar .....	4 ounces
Powdered acacia .....	$\frac{1}{2}$ ounce
Powdered myrrh .....	$\frac{1}{2}$ ounce
Carbolic acid .....	2 drams
Menthol .....	20 grains
Glycerin and water, enough to make a paste.	

Proceed as under "Antiseptic Dental Cream."

#### Carbolic Tooth Paste.

Melt 1 pound best honey; skim carefully and add 4 ounces glycerin. Then incorporate thoroughly in a mortar sufficient of the following powder, perfectly levigated and mixed, to bring the paste to the desired consistence:

Precipitated chalk.....	1 pound
Orris powder.....	4 ounces
Carmine .....	1 dram

Aromatize with carbolic acid,  $\frac{1}{2}$  dram; oil of wintergreen, 20 drops; oil of cinnamon, 5 drops; in alcohol,  $\frac{1}{2}$  ounce.

#### Carbolated Tooth Paste.

Chalk .....	6 ounces
Liquid carmine .....	$\frac{1}{4}$ ounce
Powdered orris .....	1 ounce
Carbolic acid .....	$\frac{1}{2}$ dram
Oil of wintergreen .....	8 drops
Oil of peppermint .....	5 drops
Saccharin .....	2 grains
Glycerin .....	6 drams
Rose water, a sufficiency.	

Proceed as above.

#### Camphorated Tooth Paste.

Precipitated chalk.....	12 ounces
Powdered myrrh .....	$\frac{1}{2}$ ounce
Powdered camphor .....	$\frac{1}{2}$ ounce
Powdered soap .....	$\frac{1}{2}$ ounces
Sodium bicarbonate.....	$\frac{1}{2}$ ounces
Oil of lavender .....	10 drops
Oil of lemon .....	10 drops
Oil of bergamot .....	10 drops
Oil of rose .....	10 drops
Glycerin and water (1:3) enough to make a paste.	

Mix.

#### Dentalba.

Precipitated chalk .....	12 ounces
Prepared chalk .....	6 ounces
Powdered orris .....	6 drams
Essence of vanilla.....	3 drams
Tincture of coumarin.....	6 drams
Tincture of benzoin .....	3 drams
Ammonia water (stronger)	1 dram
Carmine .....	1 dram
Otto of rose.....	12 minims
Oil of cloves.....	12 minims
Glycerin .....	q. s.
Water .....	q. s.

Mix 1 part of glycerin and three parts of water; dissolve the carmine in the ammonia, add the glycerin solution and filter. Mix the other ingredients thoroughly and make into a paste with the filtered liquid.

#### Charcoal Tooth Paste.

Powdered charcoal .....	1 ounce
Powdered cinchona .....	1 ounce
Vanilla sugar .....	1 ounce
Oil of cinnamon.....	10 drops
Honey .....	1 ounce

Mix and form a paste.

#### Charcoal Tooth Paste.

Powdered charcoal .....	16 ounces
Powdered orris .....	16 ounces
Precipitated chalk .....	32 ounces
Glycerin and water, to proper consistence.	

Mix.

#### Charcoal Tooth Paste.

Powdered charcoal .....	4 ounces
Chalk .....	2 ounces
Glycerin .....	1 ounce
Oil of rose.....	6 drops
Water, enough to make a paste.	

Mix.

#### Cherry Tooth Paste.

Chalk .....	4 ounces
Orris root.....	2 drams
Solution of carmine.....	1 ounce
Glycerin .....	$\frac{1}{4}$ ounce

Mix the solution of carmine and the glycerin and add to the mixed powders to form a paste.

#### Cherry Tooth Paste.

Powdered pumice stone...	2 ounces
Powdered orris root.....	2 ounces
Powdered myrrh .....	$\frac{1}{2}$ ounce
Oil of lemon .....	12 drops
Oil of cloves .....	6 drops
Otto of rose.....	2 drops
Liquid carmine.....	2 drams
Glycerin and water (1:3) to make a paste.	

Mix.

#### Cherry Tooth Paste.

Chalk .....	2 ounces
Alum .....	40 grains
Liquid carmine.....	1 dram
Oil of cinnamon .....	6 drops
Oil of cloves .....	3 drops
Oil of peppermint .....	3 drops
Glycerin and water, to make a paste.	

Mix.

#### Coca Tooth Paste.

Powdered white soap....	1 ounce
French chalk.....	3 ounces
Cuttlefish bone.....	$\frac{1}{2}$ ounce
Carmine .....	$\frac{1}{2}$ dram
Tincture of coca leaves...	$\frac{1}{2}$ ounce
Oil of peppermint .....	20 minims
Oil of cascarrilla .....	5 minims
Oil of lignaloes .....	15 minims
Glycerin and water, a sufficiency.	

Make into a paste, as directed under "Antiseptic Dental Cream."

**Cherry Tooth Paste.**

Powdered orris root.....	2 ounces
Powdered myrrh .....	½ ounce
Powdered pumice stone (levigated) .....	2 ounces
Honey and glycerin.....	4 ounces
Oil of cloves.....	½ dram
Essence of lemon.....	1½ drams
Otto of rose .....	8 drops
Solution carmine to color.	

Mix the powdered orris, myrrh and pumice together intimately, and add the solution of carmine; then add the essential oils, care being taken to have the ingredients uniformly mixed. Now add the honey and glycerin and form a paste.

**Damask Tooth Paste.**

Chalk .....	6 ounces
Orris root.....	5 ounces
Oil of cloves .....	10 drops
Otto of rose.....	10 drops
Oil of peppermint .....	5 drops
Oil of lavender .....	5 drops
Liquid carmine .....	½ ounce
Saccharin .....	5 grains
Glycerin and water, enough to make a paste.	

Mix, as directed under "Antiseptic Dental Cream."

**Eucalyptus Tooth Paste.**

Precipitated chalk.....	3 ounces
French chalk.....	2 ounces
Powdered white soap.....	1½ ounces
Starch .....	1½ ounces
Carmine .....	15 grains
Oil of peppermint .....	15 minims
Oil of rose geranium.....	15 minims
Oil of eucalyptus .....	½ dram
Oil of cloves .....	6 minims
Oil of anise .....	6 minims
Glycerin and water, of each a sufficiency to make a paste.	

**Eucalyptus Tooth Paste.**

Precipitated chalk.....	4 ounces
Powdered orris root.....	2 ounces
Powdered cuttlefish bone..	1 ounce
Liquid carmine.....	3 drams
Oil of eucalyptus .....	½ dram
Oil of peppermint .....	10 drops
Oil of cloves .....	5 drops
Oil of lemon .....	5 drops
Oil of anise .....	3 drops
Glycerin and water, to make a paste.	

Mix.

**Dr. Harlan's Tooth Paste.**

Precipitated chalk.....	2 ounces
Powdered orris.....	2 ounces
Powdered castile soap (white) .....	½ ounce
Powdered cuttlefish bone..	2 drams
Powdered myrrh .....	1 dram
Powdered white sugar.....	1 dram
Powdered borax .....	1 ounce
Carmine .....	10 grains
Oil of wintergreen.....	1 dram
Glycerin .....	1 ounce
Honey .....	1 ounce

Mix well after dissolving the carmine in a little water, alkalized with a little borax.

**Hager's Tooth Paste.**

Sodium salicylate .....	2¼ drams
Sodium bicarbonate .....	30 grains
Powdered talc .....	1½ ounces
Powdered castile soap.....	1½ ounces
Carmine .....	4½ grains
Oil of peppermint.....	20 drops
Glycerin .....	2½ drams
Diluted alcohol.....	5¼ drams

Make into a paste, as directed under "Antiseptic Dental Cream."

**Tooth Paste for Collapsible Tubes.**

Precipitated chalk.....	8 ounces
Powdered cuttlefish bone..	2 ounces
Powdered castile soap.....	2 ounces
Carmine, No. 40, in fine powder .....	1 dram
Oil of cloves .....	20 minims
Oil of nutmeg .....	20 minims
Oil of bitter almond.....	10 minims
Oil of rose .....	5 minims
Alcohol, glycerin, honey or syrup and water, of each .....	equal parts

Beat the soap first with water, and warm until softened, then add the remaining liquids and mix well together. Mix the solid ingredients and the silt, and then make into a paste with a sufficiency of the mixed liquids.

**Acid Tooth Paste.**

Calcium carbonate pre- cipitated .....	1½ ounces
Sugar .....	1 ounce
Potassium bitartrate.....	½ dram

Make into a paste with  
Glycerin ..... 2 fl. ounces |

Rose water..... 2 fl. ounces |

And add this to the following solution, enected by heat:

Castile soap, white (or good glycerin soap)....	4 av. ounces
Alcohol .....	1 fl. ounce
Rose water.....	½ fl. ounce

And finally, after cooling, add:

Oil of peppermint.....	60 drops
Carmine dissolved in am- monia .....	30 grains

**Myrrh and Alum Tooth Paste.**

Powdered pumice stone....	1 ounce
Powdered cuttlefish bone..	1½ ounces
Powdered myrrh .....	3 ounces
Powdered orris root.....	3½ ounces
Powdered precipitated chalk .....	6 ounces
Powdered alum .....	1 ounce
Curd soap.....	4 ounces
Glycerin .....	2 ounces
Rose water.....	8 ounces
Otto of rose.....	1 dram
Oil of cloves.....	2 drams

Shred the soap, mix it with the glycerin, and heat on a water bath till uniform; then add the water, and mix with the powders, finally adding the perfume.

**Myrrh Tooth Paste.**

Precipitated chalk.....	6 ounces
Powdered myrrh.....	6 drams
Arrowroot.....	4 drams
Oil of cinnamon.....	½ dram
Glycerin and chloroform water, to make a paste.	

Mix, as directed under "Antiseptic Dental Cream."

**Floral Dentine.**

Precipitated chalk.....	5 ounces
Powdered orris root.....	2½ ounces
Powdered cuttlefish bone..	1½ ounces
Liquid carmine.....	1 dram
Oil of lemon .....	½ dram
Oil of rose geranium.....	20 drops
Glycerin and peppermint water, enough to make a paste.	

Mix.

**Nutmeg Tooth Powder.**

Precipitated chalk.....	½ pound
Powdered orris root.....	½ pound
Carmine .....	2 drams
Oil of cloves .....	½ dram
Oil of nutmeg .....	½ dram
Oil of rose .....	½ dram
Glycerin and water, enough to make a paste.	

Mix.

**Kalodont.**

Precipitated carbonate of lime	5 ounces
Neutral soap	5 ounces
Glycerin	5 ounces

Mix carefully and make into a homogeneous paste. Color with carmine and perfume with oil of peppermint. Place into a porcelain vessel, melt over the water bath and let cool, with constant stirring. Put into metallic tubes. If not sufficiently fluid, remelt and add a little water.

**Nutmeg Tooth Paste.**

Glucose	8 ounces
Precipitated chalk	8 ounces
Powdered orris	8 ounces
Powdered cuttlefish bone	1 ounce
Carmine	1½ drams
Oil of cloves	½ dram
Oil of nutmeg	½ dram
Oil of rose	½ dram
Glycerin, enough to make a paste.	

Mix.

**Pink Tooth Paste.**

Precipitated chalk	200 grains
Pumice	100 grains
Orris	100 grains
Cinnamon	60 grains
Cloves	60 grains
Oil of cloves	6 drops
Carmine, liquid	1 dram

Make into a paste with glycerin and water, according to art.

**Ruby Tooth Paste.**

Powdered castile soap	2 ounces
Powdered orris	6 ounces
Precipitated chalk	6 ounces
Powdered cuttlefish bone	2 ounces
Powdered pumice	1 ounce
Powdered catechu	½ ounce
Powdered cinchona	½ ounce
Glycerin and water, to make a paste.	
Solution of carmine, q. s. to color.	
Oil of cloves	½ ounce
Oil of wintergreen	½ ounce
Oil of nutmeg	½ ounce

Mix.

**Cretae Cream.**

Precipitated chalk	3 ounces
Powdered carb. magnesia	2 drams
Powdered white castile soap	40 grains

Mix and add:

Oil of cloves	1 minim
Oil of cassia	1 minim
Oil of orange sweet	1 minim
Oil of lavender flowers	1 minim
Oil of rose geranium (Turk)	3 minims

Mix thoroughly, then add a mixture of

Glycerin	1 part
Water	6 parts

Triturate for a long time.

**Saponaceous Tooth Paste.**

Soft soap	5 ounces
Glycerin	7 ounces
Animal soap	15 grains
Salicylic acid	20 grains

Melt together and add

Precipitated chalk	25 ounces
Cuttlefish bone, powdered	1 ounce

Perfume with

Oil of cassia	8 minims
Oil of cloves	10 minims
Otto of rose	10 minims

Color if desired, with 8 grains carmine dissolve in 1½ ounces solution of potassa.

**Myrrhine Tooth Paste.**

Precipitated chalk,	
Powdered orris, of each	4 ounces
Powdered white castile soap	1 ounce
Powdered myrrh	½ ounce
Honey,	
Glycerin, of each equal parts to make a paste.	
Oil of wintergreen	30 minims
Oil of peppermint	20 minims

Mix.

**Quinine Tooth Paste.**

Red coral	3 ounces
Cuttlefish bone	1 ounce
Quinine bisulphate	½ dram
Honey	4 ounces
Otto of rose	2 drops
Oil of neroli	3 drops
Alcohol	3 drams

Triturate the red coral and cuttlefish bone to a very fine powder; dissolve the oils in the alcohol, and add to the mixed powders; then add the honey and beat to a smooth paste.

**Sinodor Tooth Paste.**

Mix 1 kilogram of a 20 per cent solution of magnesium acetate with 60 grams of calcined magnesia, and sufficient carbonate of magnesium to make a thick paste; perfume with oil of peppermint.

**Soluble Tooth Paste (Saline Dentifrice).**

Potassium bitartrate or potassium sulphate (in fine powder), 3 ounces; honey of roses, 2 ounces.

**Coral Tooth Paste (Opiat Dentifrice Rouge).**

Prepared coral, 8 ounces; cuttlefish bone, 4 ounces; mastic, 2 ounces; cochineal, ¼ ounce; honey, ¾ pound; essence of ambergris, 1 fluid dram; oil of cloves, ½ fluid dram, dissolved in rectified spirit, 1 fluid ounce. Beat to a paste.

**Saponaceous Tooth Paste.**

Precipitated chalk	2 ounces
Castile soap	1 ounce
Orris	1 ounce
Oil of sassafras	10 minims
Oil of bay	20 minims
Glycerin and water, enough to make a paste.	

Mix.

**Soap Tooth Paste, Spanish Dentifrice.**

Castile soap (air dried, in fine powder) 2 ounces  
Cuttlefish bone 2 ounces  
Honey 4 or 5 ounces  
Aromatics or perfume (at will), q. s., with or without the addition of a little 90 per cent alcohol.

**Vienna Tooth Paste.**

Powdered castile soap	1 ounce
Precipitated chalk	5 ounces
Powdered alum	½ ounce
Powdered gum benzoin	½ ounce
Powdered myrrh	½ ounce
Carmine	12 grains
Ammonia water	q. s.
Oil of peppermint	5 minims
Oil of cloves	5 minims
Oil of cinnamon	5 minims
Glycerin, enough to make a paste.	

Triturate the carmine with sufficient water of ammonia (about 30 minims) and incorporate with the chalk, to which have been previously added the oils; then add the remaining dry ingredients, and make into a paste of suitable consistence with a mixture of one part of glycerin to 3 parts of water.



**Violet Tooth Paste.**

Precipitated chalk.....	3 ounces
Powdered cuttlefish bone..	2 ounces
Powdered sugar .....	2 ounces
Powdered orris .....	1 ounce

Make the above into a paste with equal parts of glycerin and violet water.

**Thymol Tooth Paste.**

Thymol .....	20 grains
Alcohol .....	2 drams
Precipitated chalk.....	25 ounces
Carmine solution.....	1 dram

Tooth paste excipient, to make a paste.

Dissolve the thymol in the alcohol, add the carmine solution, mix with the other ingredients and make a paste with the excipient (see formula "Excipient for Tooth Paste," beginning this section).

**Vanilla Tooth Paste.**

Precipitated chalk.....	4 ounces
Powdered orris root.....	1 ounce
Tincture of vanilla.....	2 drams
Oil of cinnamon.....	5 drops

Excipient, sufficient.

Mix the chalk with the tincture and oil, dry, and add the other ingredients.

**Vanilla Tooth Paste.**

Powdered charcoal, powdered cinchona, and vanilla sugar (made by mixing 1 ounce of sugar with 1 dram of tincture of vanilla), each 1 ounce; oil of cinnamon, 10 drops; honey, 1 ounce; the whole well mixed together.

**Stick Dentifrice.**

Precipitated chalk.....	11 troy ounces
Powdered castile soap....	5 troy ounces
Powdered willow charcoal.	20 grains
Oil of wintergreen.....	80 minims

Dilute glycerin (1 glycerin to 5 of water), q. s.

Make into a stiff pill mass; roll and cut in cylinders 4 inches long and  $\frac{3}{4}$  of an inch in diameter.

**Nameless Tooth Pastes.**

The following formulas are good samples for reliable tooth pastes, to which the manufacturer may give any name he chooses.

Powdered soap .....	1 ounce
Heavy magnesium carbonate .....	2 ounces
Precipitated chalk .....	6 ounces
Oil of neroli.....	20 drops

Glycerin and orange flower water, a sufficiency.

Incorporate the oil in the chalk, add the soap and magnesia and sift. Mix the glycerin and orange flower water in the proportion of 1 to 4 and make a paste.

**Nameless Tooth Paste.**

Precipitated chalk .....	2 ounces
Powdered orris root.....	1 ounce
Powdered soap .....	1 ounce
Liquid carmine.....	$\frac{1}{2}$ ounce
Oil of cinnamon.....	3 drops
Oil of peppermint .....	10 drops

Glycerin and water, enough to make a paste.

Mix.

**Peroxide Tooth Paste.**

Precipitated chalk .....	4 ounces
Orris root .....	1 ounce
Magnesium peroxide .....	1 ounce
Oil of peppermint .....	10 drops
Oil of cinnamon .....	5 drops
Oil of cloves .....	3 drops

Glycerin and water, enough.

Mix.

**Peroxide Tooth Paste.**

Nearly every formula may be changed to a peroxide tooth paste, by substituting hydrogen peroxide for water.

**Potassium Chlorate Tooth Paste.**

Potassium chlorate.....	$\frac{1}{2}$ ounce
Precipitated chalk.....	4 ounces
Powdered orris root.....	1 ounce

Perfume, as desired.

Glycerin and water, enough.

Mix.

**Potassium Chlorate Tooth Paste.**

Potassium chlorate.....	$\frac{1}{2}$ ounce
Powdered orris root.....	2 ounces
Powdered cuttlefish bone..	1 ounce
Oil of peppermint .....	5 drops
Oil of cinnamon .....	3 drops
Oil of cloves .....	2 drops
Oil of lemon .....	3 drops
Liquid carmine.....	15 drops

Glycerin and rose water, enough.

Mix.

**Tooth Soaps.**

Tooth soaps are sometimes ordered and some general directions are here given. As made by soap-makers who have the proper molds and stamps they consist, as a rule, of aromatic soaps to which the tooth powder is added. In a small way tooth soaps are made by shredding one pound of the best toilet soap without perfume and placing it in a basin with a pint of water and 1 ounce of glycerin. Heat gently until dissolved and the contents weigh about 24 ounces. Transfer to a large warm mortar and gradually work in one pound of the required tooth powder. Beat the mass for a long time until uniform. The quantity of powder must naturally vary a little according to the consistency of the soap. Then transfer the mass to a marble slab and roll with a rolling pin, using powdered soap as a dusting powder. Set aside in a warm place for 24 hours and roll again, until it does not shrink any more; then cut into suitable cakes.

**Tooth Soap.**

Precipitated chalk.....	3 ounces
Powdered orris root.....	$\frac{1}{2}$ ounce
Powdered pumice stone....	2 ounces
Powdered castile soap....	1 ounce
Glycerin .....	2 drams
Alcohol .....	$2\frac{1}{2}$ ounces

Mix the soap in a mortar with the glycerin and alcohol, add to this the powders, previously triturated with perfume and coloring matter. Beat well together. Let stand for six hours, and roll and cut into suitable pieces. Finally, after drying the pieces, cover them with tincture of benzoin.

**Tooth Soap.**

Precipitated chalk.....	4 ounces
Powdered pumice stone....	1 ounce
Powdered castile soap....	1 ounce
Glycerin .....	2 drams
Alcohol .....	$2\frac{1}{2}$ ounces

Proceed as directed in the preceding formula.

**Hard Tooth Soap.**

Precipitated chalk.....	2 drams
Carmine .....	3 grains
Powdered soap.....	5 drams
Oil of peppermint.....	10 drops
Alcohol .....	45 minims

Triturate the carmine with a few drops of ammonia water and add the precipitated chalk. Dissolve the oil of peppermint in the alcohol; add the solution to the soap, contained in a mortar, and thoroughly incorporate; then add the precipitated chalk, and when the whole is homogeneous transfer to suitable molds and dry.

**Tooth Soap.**

Precipitated chalk.....	1 ounce
Liquid carmine.....	1 dram
Aqua ammonia.....	1 dram
Powdered castile soap.....	2 ounces
Oil of peppermint.....	$\frac{1}{2}$ dram
Alcohol.....	3 drams

Make into a paste and mold as in the preceding.

**Liquid Tooth Soap.**

Soap liniment.....	3 ounces
Tincture of myrrh.....	$\frac{1}{2}$ ounce
Glycerin.....	$\frac{1}{2}$ ounce
Oil of peppermint.....	10 drops
Liquid carmine, enough to color.	

Mix.

**Vegetable Tooth Soap.**

Talcum.....	1 pound
Pumice stone.....	1 ounce
Orris root.....	3 ounces

Color with chlorophyll, and flavor with a mixture of:

Oil of peppermint.....	1 dram
Oil of sage.....	$\frac{1}{2}$ dram
Oil of calamus.....	$\frac{1}{2}$ dram
Oil of origanum.....	20 drops
Oil of thyme.....	15 drops
Cumarin.....	$\frac{1}{2}$ dram

Beat to a soft paste the following:

Soap powder.....	$\frac{1}{2}$ pound
Alcohol.....	3 $\frac{1}{2}$ ounces
Glycerin.....	1 $\frac{1}{2}$ ounces

Gradually incorporate the powders, press into molds, brush the cakes with tincture of benzoin containing a little oil of peppermint, and cover with tin foil.

**Tooth Tablets.**

Tooth tablets are tooth powders, generally without soap, made into a paste with alcohol and a small amount (1 or 2 per cent of the powder) of compound tragacanth powder. The paste is cut into suitable cakes, or put in molds and the resulting cakes, or tablets, are then dried. They crumble when pressed in the palm of the hand. Any formula given under tooth powder may be used to make these tablets.

**LIQUID DENTIFRICES.**

From a sanitary standpoint liquid dentifrices are preferable to powders or pastes, as the teeth do not require the application of powders every day. The brush is sufficient, if aided by the antiseptic and detergent properties of the liquid. Most people prefer a saponaceous liquid; for this purpose a tincture of quillaja is best added. As a rule tooth washes are colored pink or red with cochineal or fuchsin or yellow with saffron. Other colors are not desirable.

**Tincture of Quillaja for Liquid Dentifrices.**

Quillaja, in powder.....	4 ounces
Diluted alcohol (1:4).....	1 pint

Macerate for 3 days, shaking often, and filter, adding enough menstruum to obtain 1 pint.

**Antiseptic Dentifrice.**

Tincture of myrrh.....	2 fl. ounces
Thymol.....	5 grains
Borax, powdered.....	$\frac{1}{2}$ ounce
Sandalwood, sufficient to color.	
Oil of cloves.....	5 drops
Oil of cinnamon.....	5 drops
Zinc chloride.....	4 grains
Dilute alcohol.....	1 pint

Mix. Macerate for 3 days, shaking often and filter.

**Antiseptic Dentifrice.**

Thymol.....	1 dram
Oil of peppermint.....	1 dram
Oil of eucalyptus.....	$\frac{1}{2}$ dram
Oil of lemon.....	1 $\frac{1}{2}$ drams
Chloroform.....	5 drams
Glycerin.....	1 ounce
Cochineal (powdered).....	1 dram
Alcohol, enough to make..	1 pint

Mix, macerate for 3 days and filter.

**Reid's Antiseptic Liquid Dentifrice.**

Thymol.....	2 grains
Carbolic acid.....	5 drops
Oil of sassafras.....	8 drops
Oil of wintergreen.....	8 drops
Oil of rose geranium (Turk).....	8 drops
Oil of eucalyptus.....	3 drops
Oil of calamus.....	5 drops
Oil of pinus pumilio.....	20 drops
Glycerin.....	2 ounces
Alcohol.....	4 $\frac{1}{2}$ ounces
White castile soap.....	2 drams
Distilled water, enough to make.....	16 ounces
Tincture cudbear, q. s., to color.	

Dissolve the soap in 5 ounces warm water. Dissolve the acid and oils in the alcohol and add to the soap solution. Filter through paper containing a small quantity of calcium phosphate. Add glycerin.

**Illadin (Tooth Wash).**

Salol.....	30 grains
Menthol.....	45 grains
Oil of peppermint.....	50 minims
Oil of anise.....	20 minims
Alcohol.....	8 fl. ounces
Cochineal coloring, q. s.	

Dissolve and filter.

**Tooth Wash.**

Thymol.....	15 grains
Alcohol.....	2 pints
Powdered cochineal.....	45 grains
Filter and add:	
Oil of peppermint.....	45 minims
Cinnamon.....	23 grains

Mix, macerate for 3 days and filter.

**Deodorant Dentifrice.**

Salicylic acid.....	120 grains
Tincture of myrrh.....	2 ounces
Tincture of soap bark.....	2 ounces
Cologne.....	4 ounces
Glycerin.....	1 ounce
Alcohol.....	5 ounces
Tincture of orris.....	2 ounces

Mix, allow to stand for 3 days, shaking often and filter.

**Tooth and Mouth Wash.**

Sodium salicylate.....	5.0
Sodium bicarbonate.....	2.5
Dissolve in	
Rose water.....	100.0

Then add:

Tincture of cinnamon.....	20.0
Alcohol, dilute.....	25.0
Oil of peppermint.....	15 drops

Filter.

**Carbolic Dentifrice.**

Carbolic acid.....	1 ounce
Tincture of quillaja.....	5 ounces
Tincture of fresh lemon peel.....	4 ounces
Tincture of myrrh.....	6 ounces
Alcohol.....	6 pints
Water, sufficient to make..	8 pints

Mix, and filter after 8 days.

**Salol Tooth Wash.**

Cloves .....	1 dram
Ceylon cinnamon.....	1 dram
Cochineal .....	$\frac{1}{2}$ dram
Alcohol .....	1 pint

Macerate for 8 days, and add:  
 Oil of peppermint.....  $\frac{1}{2}$  dram  
 Salol ..... $\frac{1}{2}$  drams |

Shake frequently, and filter after 24 hours.

**Astringent Tooth Wash.**

Oil of santal.....	4 drops
Extract of violet .....	$\frac{1}{2}$ ounce
Extract of vanilla .....	$\frac{1}{2}$ ounce
Tincture of orris root.....	2 ounces
Tannin .....	$\frac{1}{2}$ dram
Alcohol .....	8 ounces
Powdered sandalwood.....	1 ounce
Glycerin .....	1 ounce
Tincture of quillaja.....	12 ounces
Rose water, enough to make .....	2 pints

Macerate for a week and filter.

**Astringent Tooth Wash.**

Tincture of rhatany .....	2 ounces
Tincture of red cinchona.....	2 ounces
Tincture of cardamom comp. ....	2 ounces
Tincture of galls .....	2 ounces
Oil of wintergreen .....	60 drops
Oil of Ceylon cinnamon.....	2 drops
Oil of cloves .....	3 drops
Alcohol .....	14 ounces
Water .....	10 ounces

Mix, filter after 3 days.

**Mialhe's Liquid Dentifrice.**

Kino .....	2 ounces
Rhatany root.....	2 ounces
Alcohol .....	1 pint

Macerate for 7 days and filter, then add:  
 Tincture of tolu ..... 10 drops || Tincture of benzoin (simple) ..... | 10 drops |
Oil of canella .....	10 drops
Oil of peppermint .....	10 drops
Oil of anise .....	5 drops

Filter, adding enough alcohol to make 1 pint.

**Mentholated Dentifrice.**

Star anise.....	1 ounce
Cochineal .....	1 dram
Red cinchona bark.....	1 dram
Canella bark.....	1 dram
Cloves .....	1 dram
Pyrethrum root .....	1 dram
Menthol .....	1 dram
Alcohol (95 per cent).....	2 pints

Macerate the anise, cochineal, etc., in the alcohol for 8 days, add the menthol, and filter, adding enough alcohol to obtain 2 pints.

**Eau Dentifrice de Prodhomme.**

Angelica root .....	1 ounce
Anise seed .....	1 ounce
Cinnamon .....	2 drams
Nutmeg .....	2 drams
Cloves .....	2 drams
Oil of peppermint.....	3 drams
Alcohol, of 60 per cent.....	2 pints

Macerate 8 days, and distill on a water bath until no more liquid passes over, and add:

Red Peruvian bark.....	2 drams
Balsam of tolu.....	2 drams
Rhatany root .....	2 drams
Tincture of vanilla.....	1 dram
Powdered cochineal .....	1 dram

Macerate 6 days, and filter.

**Astringent Tincture for the Teeth and Gums.**

Myrrh .....	12 ounces
Orris root .....	12 ounces
Benzoin .....	6 ounces
Cinchona bark .....	8 ounces
Extract of krameria.....	1 ounce
Capsicum .....	1 ounce
Alcohol .....	2 gallons

Macerate for 7 days and filter; to the filtrate add 20 ounces of simple syrup.

**Odontine Liquid Dentifrice.**

Quillaja .....	4 ounces
Cudbear .....	1 dram
Alcohol, 50 per cent.....	32 fl. ounces

Digest together in a closed vessel for several days and filter. To the filtrate, measuring 32 fluid ounces, add

Heliotropin .....	2 grains
Oil of peppermint .....	20 drops
Oil of anise .....	10 drops
Alcohol .....	1 fl. ounce

Allow to stand in a warm place, for several days, filtering if necessary, and complete by adding

Glycerin .....	2 fl. ounces
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**Rose Tooth Wash.**

Quillaja .....	2 ounces
Glycerin .....	2 ounces
Eau de cologne.....	8 ounces
Rose water.....	32 ounces
Solution of carmine.....	3 drams
Essence of vanilla.....	$\frac{1}{2}$ ounce
Oil of wintergreen .....	20 drops
Oil of cloves .....	10 drops

Dissolve the oil and essence in the eau de cologne, add the rose water, digest the quillaja in the liquid for 2 weeks, shaking often. Add the glycerin and carmine, and filter.

**Foaming Dentifrice.**

Soap bark, powdered.....	2 ounces
Glycerin .....	$\frac{1}{2}$ fl. ounces
Sodium salicylate.....	2 drams
Oil of bergamot,	
Oil of wintergreen, of each	30 minims
Oil of cloves .....	10 drops
Alcohol .....	1 fl. ounce
Solution carmine, N. F.,	sufficient to color.
Dilute alcohol to make....	16 fl. ounces

Macerate the soap bark with the dilute alcohol and glycerin, and percolate. To the percolate add the oils dissolved in the alcohol, and to this add the sodium salicylate, and sufficient solution of carmine to impart the desired shade of color. Shake thoroughly and filter through wetted talcum, returning first portion of filtrate until the remainder runs through clear. Then add enough dilute alcohol to make one pint.

**Rushmere Liquid Dentifrice.**

Soap bark, ground.....	2 ounces
Glycerin .....	$\frac{1}{2}$ ounces
Sodium salicylate.....	2 drams
Oil of bergamot .....	$\frac{1}{2}$ dram
Oil of wintergreen .....	$\frac{1}{2}$ dram
Oil of cloves .....	10 drops
Alcohol .....	1 ounce
Solution of carmine (N. F.)	g. s.
Dilute alcohol, to make....	16 fl. ounces

Macerate the soap bark with the diluted alcohol and glycerin, then percolate. To the percolate add the oils dissolved in the alcohol. To this add the sodium salicylate and sufficient solution of carmine to color. Shake thoroughly and filter through wetted talcum, returning first portion of the filtrate until it runs clear and add enough dilute alcohol through the filter to make the measure 1 pint.



**Ladies' Dentifrice.**

Liquid carbolic acid.....	20 minims
Otto rose .....	5 minims
Oil of geranium .....	5 minims
Oil of bergamot .....	10 minims
Rectified spirit .....	20 fl. ounces
Quillaja bark .....	6 drams
Solution of carmine, or	
Tincture of saffron, quantity sufficient.	

Mix and macerate for 8 days, shaking occasionally, then filter.

**Saponaceous Dentifrice.**

White soap .....	1½ ounces
Glycerin .....	4 ounces
Alcohol .....	6 ounces
Hot water .....	6 ounces
Oil of peppermint .....	20 drops
Oil of wintergreen .....	20 drops
Oil of cloves .....	10 drops
Essence of vanilla.....	½ ounce
Solution of carmine, a sufficiency.	

Dissolve the soap in the water and glycerin, dissolve the perfumes in the alcohol, mix the two solutions, add the color, allow to stand 24 hours and filter.

**Smoker's Dentifrice.**

Oil of cloves .....	15 minims
Oil of cassia .....	15 minims
Oil of peppermint .....	60 minims
Oil of anise .....	90 minims
Rectified spirit .....	20 fl. ounces
Quillaja bark .....	6 drams
Solution of carmine, or	
Tincture of saffron, quantity sufficient.	

Mix all and macerate for 8 days, shaking occasionally, then filter.

**East India Myrrh Liquid Dentifrice.**

White castile soap (shavings) .....	12 ounces
Potassium carbonate.....	2½ ounces
Powdered rhatany.....	1 ounce
Glycerin .....	30 fl. ounces
Sugar .....	30 ounces
Water, sufficient quantity,	
Alcohol .....	1 gallon
Oil of cinnamon (true).....	½ fl. ounce
Oil of gaultheria .....	6 fl. drams
Oil of anise .....	6 fl. drams
Oil of cloves .....	½ fl. ounce
Oil of peppermint .....	½ fl. ounce

Put the soap in 1 gallon cold water, and add the carbonate potash. Dissolve the oils in the alcohol. Add the sugar, glycerin and rhatany to 1 gallon cold water and to it add the soap solution and the oil mixture. Lastly, add cold water to make a 5-gallon mixture. Shake daily for two weeks, then leave undisturbed for two weeks. Siphon off the clear solution and filter the rest.

**Perfect Tooth Wash.**

Soap shavings (white castile) .....	320 grains
Oil of peppermint .....	12 drops
Oil of lemon .....	12 drops
Oil of cassia .....	8 drops
Oil of cloves .....	8 drops
Oil of anise .....	16 drops
Oil of wintergreen .....	24 drops
Extract of jockey club (Lundborg's) .....	24 drops
Carminc. No. 40.....	½ grain
Ammonia water.....	4 drops
Alcohol .....	8 fl. ounces
Water .....	8 fl. ounces

Macerate the soap in the water until soft, dissolve the oils and extracts in the alcohol, and having rubbed the carmine with the ammonia, mix the three solutions, allow to stand 24 hours and filter.

**Fluid Dentifrice.**

Castile soap.....	2 drams
Glycerin .....	4 drams
Alcohol .....	2 ounces
Water .....	6 ounces
Oil of peppermint .....	3 drops
Oil of cloves .....	10 drops
Oil of cinnamon .....	10 drops
Tincture of catechu.....	2 drams

Mix, let stand for a week, shake up with a little powdered pumice stone and filter.

**Favorite Tooth Wash.**

Oil of peppermint .....	30 minims
Oil of spearmint .....	15 minims
Oil of cloves .....	15 minims
Oil of cinnamon .....	45 minims
Tincture of cudbear.....	3 fl. drams
Tincture of myrrh.....	1 fl. dram
Alcohol to make.....	1 pint
Mix and filter.	

**Rubicreme.**

Menthol .....	2 scruples
Oil of cloves .....	1½ drams
Oil of peppermint .....	1½ drams
Boric acid.....	9 drams
Tincture of myrrh .....	4½ ounces
Tincture of cudbear, N. F.	2 ounces
Alcohol to make.....	3½ fl. ounces

Dissolve the menthol and boric acid in 20 ounces of the alcohol, add the oils and then the tinctures, filter, and add alcohol to make 36 fluid ounces.

**Elixir Odontalgicum (Ancelot).**

Tincture of pyrethrum.....	60 grams
Alcohol, dilute.....	40 grams
Oil of rosemary .....	10 drops
Oil of lavender .....	5 drops
Oil of rose .....	1 drop
Mix and filter.	

**Green Dentifrice Water.**

Pyrethrum root.....	2 ounces
Cloves .....	1 dram
Orris root.....	1 dram
Coriander .....	1 dram
Creosote .....	½ dram
Oil of star anise.....	1 dram
Oil of lemon .....	½ dram
Oil of vetiver .....	½ dram
Alcohol .....	2 pints

Mix and macerate for 8 days, shaking occasionally. Then filter to obtain 2 pints.

**Red Dentifrice Water.**

Pyrethrum .....	2 ounces
Cloves .....	1 dram
Orris root.....	1 dram
Coriander .....	1 dram
Alkanet root.....	2 drams
Oil of peppermint .....	1 dram
Oil of bergamot .....	½ dram
Alcohol .....	2 pints

Macerate for 8 days, express and filter.

**Florentine Dentifrice.**

Orris root.....	8 ounces
Cloves .....	1 ounce
Ambergris .....	20 grains
Alcohol .....	1 quart

Digest for 14 days and filter, adding enough alcohol to obtain 1 quart.

**Elixir of Roses for the Teeth.**

Cloves .....	1 dram
Cinnamon .....	3 ounces
Ginger .....	2 ounces
Oil of orange.....	1 dram
Otto of roses.....	15 drops
Essence of peppermint.....	1 ounce
Alcohol, enough to make..	2 pints

Mix and macerate for 14 days. Filter to obtain 2 pints.

**Elixir of Roses.**

Eau de rose.....	2 fl. ounces
Spirit of horseradish .....	1 ounce
Spirit of scurvy grass.....	1 ounce
Camphor (powdered).....	12 grains
Cochineal (powdered).....	12 grains
Otto of roses.....	3 or 4 drops
Sugar candy (powdered).....	½ ounce

Digest for a week, decant, and strain through muslin.

**Eau de Botot (Dentifrice).**

Anise .....	1 ounce
Cloves .....	2 drams
Cinnamon .....	2 drams
Oil of mint.....	1 scruple
Brandy .....	1¾ pounds
Tincture of amber.....	1 dram

After 6 days' infusion, filter.

**Dr. Heider's Spirit Dentifrice.**

Oil of peppermint .....	6 drops
Tincture of cinchona .....	15 minims
Tincture of myrrh .....	15 minims
Aromatic spirit.....	3 fl. ounces

Mix and filter.

**Mouth Washes.**

Mouth washes differ from liquid dentifrices in so far that they are not used with a tooth brush, but added to warm water to rinse the mouth. They are used to correct foul breath, and in various disorders of the gums and teeth, by rinsing the mouth or as gargles. A teaspoonful is generally added to a cup of warm water, unless special directions are given. As a rule they contain less alcohol, but more water, than the dentifrices. The latter may also be used as mouth washes, by using from 10 to 20 drops to a glass of hot water.

**Antiseptic Mouth Wash.**

Benzoic acid.....	45 grains
Tincture of eucalyptus....	4 fl. drams
Alcohol .....	25 fl. drams
Oil of peppermint.....	4 minims

Mix and filter.

Use 10 to 15 drops to a glass of water.

**Antiseptic Mouth Wash.**

Saccharin .....	37½ grains
Benzoic acid .....	45 grains
Tincture of rhatany.....	4 fl. drams
Alcohol .....	25 drams
Oil of peppermint .....	7½ minims
Oil of cinnamon .....	7½ minims

Mix and filter.

Use 10 to 15 drops to a glass of water.

**Antiseptic Mouth Wash.**

Thymol .....	2 grains
Benzoic acid.....	2 scrup. 6 grains
Mercury bichloride .....	9 grains
Tincture of eucalyptus .....	½ ounce
Oil of peppermint.....	11 grains
Alcohol .....	¾ ounce

This is filtered and sufficient of the solution is added to a wine glass of water to cause a distinct turbidity. The mouth is rinsed with this mixture twice successively. This is a very powerful antiseptic and should be dispensed only in poison bottle with a poison label attached.

**Antiseptic Mouth Wash.**

Potassium nitrate.....	2 drams
Borax .....	½ ounce
Potassium chlorate.....	1 ounce
Tincture of arnica.....	1 ounce
Rose water, enough to make .....	24 ounces

Mix and filter. This wash is used with an equal volume of warm water and is very beneficial for swollen and tender gums.

**Antiseptic Mouth Wash.**

Tannic acid.....	½ ounce
Lugol's solution.....	2 drams
Tincture of myrrh.....	2 drams
Rose water, enough to make .....	1 pint

Mix and filter after several days. Two or three teaspoonfuls may be added to a glass of cold or hot water to rinse mouth after eating. Diluted with an equal volume of warm water it is very valuable as an astringent in dentistry, especially after extraction.

**Astringent Mouth Wash.**

Tannin .....	2 drams
Tincture of orange peel..	½ ounce
Carmine coloring.....	2 drams
Camphor water.....	10 ounces
Rose water.....	10 ounces

Mix and filter.

**Astringent Mouth Wash.**

Boric acid.....	2 drams
Tincture of krameria.....	½ ounce
Cologne water.....	10 ounces
Tincture of myrrh.....	10 ounces

Mix, filter after 3 days.

**Astringent Mouth Wash.**

Red gum.....	1 ounce
Tannin .....	6 drams
Tincture of pyrethrum....	6 drams
Lavender water.....	1 ounce
Alcohol .....	8 ounces
Water, enough to make...	1 pint

Mix, macerate for 3 days, filter.

**Borated Tincture of Myrrh.**

Myrrh .....	1 ounce
Eau de cologne.....	1 pint
Borax .....	1 ounce
Distilled water.....	3 ounces
Syrup .....	3 ounces
Essence (tincture of roses)	20 drops
Rhatany root.....	¼ ounce

Digest for 10 or 12 days and filter.

**Borated Tincture of Myrrh.**

Borax .....	1 ounce
Shellac .....	½ ounce
Myrrh .....	2 ounces
Spirit of camphor.....	2 ounces
Honey of roses.....	2 ounces
Alcohol .....	1 pint
Cologne essence.....	2 drams
Orange flower or rose water .....	4 ounces

Digest for a few days in a warm place, shaking occasionally, and filter.

**Borated Tincture of Myrrh.**

Borax .....	1 ounce
Shellac .....	½ ounce
Water .....	8 ounces

Boil together to 4 ounces and add  
 Spirit of scurvy grass.... 1 pint  
 Camphor ..... ½ ounce || Myrrh ..... | 2 ounces |

Digest and filter.

**Eucalyptus Mouth Wash.**

Oil of peppermint .....	½ dram
Oil of eucalyptus .....	1 dram
Oil of geranium .....	10 drops
Oil of cloves .....	5 drops
Oil of anise .....	5 drops
Benzoic acid .....	1 dram
Alkanet root .....	1½ drams
Alcohol .....	5 ounces

Macerate 7 days and filter. A few drops to a glass of water for a mouth wash.

**Borated Tincture of Myrrh.**

Borax ..... 1 ounce  
 Glycerin ..... 1 ounce  
 Water ..... 5 ounces  
 Tincture of myrrh, enough  
 to make..... 2 pints  
 Mix, filter after 3 days.

**Borated Tincture of Myrrh.**

Borax ..... 1 ounce  
 Glycerin ..... 4 ounces  
 Cologne water.....  $\frac{1}{2}$  ounce  
 Tincture of myrrh..... 10 ounces  
 Mix and filter after 3 days.

**Borated Tincture of Myrrh.**

Gum myrrh, select..... 1 ounce  
 Tincture of krameria..... 10 drams  
 Borax .....  $1\frac{1}{2}$  drams  
 Glycerin .....  $\frac{1}{2}$  ounce  
 Cologne water..... 10 ounces  
 Macerate for 2 weeks, shaking often and filter.

**Borated Tincture of Myrrh.**

Glycerite of borax..... 1 ounce  
 Tincture of myrrh..... 10 ounces  
 Cologne water..... 5 ounces  
 Tincture of krameria.....  $\frac{1}{2}$  ounce  
 Mix, and filter after 3 days.

**Bouquet Tincture Myrrh.**

Gum myrrh..... 1 ounce  
 Oil of neroli .....  $\frac{1}{2}$  dram  
 Oil of lavender .....  $\frac{1}{2}$  dram  
 Oil of lemon ..... 1 dram  
 Oil of bergamot .....  $\frac{1}{2}$  dram  
 Otto of rose..... 3 drops  
 Alcohol ..... 1 pint  
 Borax .....  $\frac{1}{2}$  ounce  
 Glycerin ..... 2 ounces  
 Syrup ..... 2 ounces  
 Water ..... 4 ounces

Macerate the myrrh and the oils in the alcohol for 7 days, filter. Dissolve the borax in the water, add the glycerin and syrup; mix all, let stand 7 days, shaking often and filter.

**Eau de Botot.**

Tincture of cedarwood .... 1 pint  
 Tincture of myrrh ..... 4 ounces  
 Tincture of rhatany ..... 4 ounces  
 Oil of peppermint ..... 10 drops  
 Oil of rose ..... 10 drops

Mix and filter. Use  $\frac{1}{2}$  to 1 teaspoonful to a glass of water.

**Eau de Botot.**

Cloves ..... 2 drams  
 Cinnamon ..... 2 drams  
 Star anise..... 2 drams  
 Alcohol ..... 1 pint  
 Rose water..... 2 ounces

Pulverize the solids, mix the alcohol and rose water and macerate 24 hours. To the mixture then add:

Cochineal .....  $\frac{1}{2}$  dram  
 Cream of tartar..... 1 dram  
 Oil of peppermint..... 1 dram

Let the mixture stand another 24 hours, frequently agitating, and filter. Use 1 teaspoonful with water as a mouth wash.

**Mouth Wash.**

Tannin,  $\frac{1}{2}$  dram; tincture of tolu, 2 fluid drams; tincture of myrrh, 6 fluid drams; spirit of horseradish, 2 fluid ounces; mix. In spongy gums, scurvy, etc.; diluted with tepid water.

**Eberman's Mouth Wash.**

Sweet orange peel..... 3 ounces  
 Cinnamon ..... 3 ounces  
 Cloves .....  $\frac{1}{2}$  ounce  
 Star anise .....  $1\frac{1}{2}$  ounces  
 Salvia .....  $\frac{1}{2}$  ounces  
 Benzoin ..... 1 ounce  
 Cochineal ..... 6 drams  
 Alum ..... 6 drams  
 Peppermint oil ..... 1 dram  
 Oil of anise..... 20 drops  
 Alcohol ..... 2 pints

Macerate the drugs in the alcohol for several days; strain and express, and in the collate dissolve the oils. Dissolve the alum in the smallest quantity of water, and add to the solution; let stand 24 hours and filter. A small quantity dropped into a glass of water makes a delightful mouth wash.

**Hudson's Tooth Tincture.**

From the tinctures of myrrh and cinchona, and cinnamon water, equal parts, with a little arquebusade and gum arabic.  
 Half a teaspoonful to a glass of water.

**Iodo-Tannin Gum Lotion.**

Tannin ..... 1 dram  
 Tincture of iodine .....  $\frac{1}{2}$  dram  
 Tincture of myrrh ..... 1 dram  
 Alcohol .....  $1\frac{1}{2}$  ounces  
 Rose water, enough to  
 make ..... 5 ounces

Mix and filter. A teaspoonful in a glass of warm water is very useful in preventing loosening of the teeth.

**Mentholine Mouth Wash.**

Menthol ..... 40 grains  
 Oil of cloves .....  $1\frac{1}{2}$  fl. drams  
 Oil of peppermint .....  $1\frac{1}{2}$  fl. drams  
 Boric acid ..... 9 drams  
 Tincture of myrrh .....  $4\frac{1}{2}$  fl. ounces  
 Tincture of cudbear N. F. 2 fl. ounces  
 Alcohol, sufficient to make 36 fl. ounces

Dissolve the menthol and boric acid in 20 fluid ounces of the alcohol, add the oils and tinctures, filter, and add enough alcohol to make 36 fluid ounces.

**Mouth Wash.**

Balsam of Peru, 2 drams; camphor,  $\frac{1}{2}$  dram; essence of musk and liquor of ammonia, of each,  $\frac{1}{2}$  fluid dram; tincture of myrrh, 3 fluid drams; spirit of horseradish,  $1\frac{1}{2}$  fluid ounces. To sweeten and perfume the breath, a teaspoonful in half a wineglassful of tepid water to rinse the mouth with.

**Mouth Wash.**

Borax,  $\frac{1}{4}$  ounce; water and tincture of myrrh, of each 1 fluid ounce; honey of roses, 2 ounces. In tender or ulcerated gums.

**Mouth Wash.**

Chloride of lime,  $\frac{1}{2}$  ounce; water, 2 fluid ounces; agitate well together in a phial for half an hour, filter, and add, of rectified spirit, 2 fluid ounces; rose or orange flower water, 1 fluid ounce. Used, highly diluted with water, by smokers and persons having a foul breath.

**Preservative Lotion for the Teeth and Gums.**

Oil of bergamot ..... 3 drops  
 Oil of neroli ..... 5 drops  
 Tincture of pyrethrum.....  $2\frac{1}{2}$  ounces  
 Spirit of chloroform.....  $1\frac{1}{2}$  drams  
 Potassium nitrate..... 3 drams  
 Rose water..... 2 pints

Mix the first 4 ingredients; dissolve the potassium nitrate in the rose water; mix, shake, and filter after 3 days.



**Mouth Wash.**

Camphor (cut small),  $\frac{1}{4}$  ounce; rectified spirit, 2 fluid ounces; dissolve. A few drops to be added to a wineglassful of water, to sweeten the breath and preserve the teeth.

**Mouth Wash.**

Mastic (in powder), 2 drams; balsam of Peru,  $\frac{1}{2}$  dram; gum, 2 drams; orange flower water, 6 fluid ounces; tincture of myrrh, 2 fluid ounces. In loose teeth, etc.

Macerate the mastic and balsam of Peru in the tincture of myrrh, and filter after 3 days. Dissolve the gum in the orange flower water. Mix and filter after 3 days.

**New Tooth Wash.**

The root of geranium suelda (Bolivia), dried and coarsely powdered, is steeped in twice its weight of 98 per cent alcohol, thus affording a fine red tincture. Ten drops of the preparation in a glass of water to make a mouth wash. It may also be applied, with great benefit, to decaying teeth with a little pledget of cotton.

**Quillaja Tooth Wash.**

Soap bark, ground.....	4 ounces
Glycerin .....	3 ounces
Alcohol .....	12 ounces
Water .....	20 ounces
Percolate to obtain.....	32 ounces
Oil of wintergreen .....	20 drops
Oil of peppermint .....	20 drops

Dissolve the oils in 1 ounce of water; mix all and filter after 3 days.

**Saccharin Preparation for the Teeth.**

Saccharin .....	10 grains
Borax .....	3 drams
Peppermint water.....	2 ounces
Distilled water, enough to make .....	1 pint

Mix. Use as a gargle.

**Saccharin Preparation for the Teeth.**

Saccharin .....	10 grains
Essence of cloves.....	1 ounce
Tincture of calamus.....	2 ounces
Tincture of musk .....	$\frac{1}{2}$ ounce
Alcohol, 60 per cent, enough to make.....	1 pint

Mix. Twenty drops in a glass of water, to be used as a gargle and mouth wash.

**Saccharin Preparation for the Teeth.**

Saccharin .....	10 grains
Dilute alcohol.....	1 pint
Essence of peppermint....	$\frac{1}{2}$ ounce

Mix. For a mouth wash. Half a teaspoonful to a teaspoonful, pure, thrice daily.

**Saccharin Preparation for the Teeth.**

Saccharin .....	10 grains
Tincture of myrrh.....	$\frac{1}{4}$ ounce
Lavender water.....	1 pint

Mix. Half a teaspoonful to a teaspoonful as a gargle and mouth wash after meals. Use undiluted.

**Saccharin Preparation for the Teeth.**

Saccharin .....	20 grains
Cologne water.....	8 ounces
Rose water.....	8 ounces

Mix. Use as above.

**Saccharin Mouth Wash.**

Saccharin .....	1 grain
Oil of cloves.....	15 drops
Tincture of myrrh .....	$\frac{1}{2}$ ounce
Tincture of benzoin .....	$\frac{1}{2}$ ounce
Tincture of cinchona .....	$\frac{1}{2}$ ounce

Mix and filter.

**Salicylated Mouth Wash.**

Oil of peppermint .....	$\frac{1}{2}$ dram
Oil of gaultheria .....	$\frac{1}{2}$ dram
Salicylic acid .....	$\frac{1}{2}$ ounce
Rose water .....	5 ounces
Alcohol .....	20 ounces

Dissolve the acid and the oils in the alcohol, add the rose water and filter.

**Salol Mouth Wash.**

Salol, pure.....	$\frac{1}{2}$ ounce
Oil of peppermint.....	$\frac{1}{2}$ dram
Cloves, ground.....	1 dram
Cinnamon, ground.....	1 dram
Star anise, ground.....	1 dram
Cochineal, powdered.....	$\frac{1}{2}$ dram
Alcohol .....	1 pint

Digest the cloves, cinnamon, star anise and cochineal in the alcohol for a week, add the oil of peppermint, and filter. Then dissolve it in the salol.

For use, add enough of the solution (about 30 drops) to a tumblerful of water to give it a decidedly milky appearance.

**Saponaceous Dentifrice (Panama Mundwasser).**

Tincture of quillaja.....	4 ounces
Salicylic acid.....	1 ounce
Dilute alcohol.....	12 ounces
Oil of peppermint.....	1 dram

Mix and filter.

Teaspoonful in  $\frac{1}{2}$  glass water as a mouth wash.

**Smoker's Lotion.**

Peppermint water.....	6 ounces
Cherry laurel water.....	$\frac{1}{2}$ ounce
Carbolic acid.....	3 drops
Borax .....	1 dram

Mix and filter. Use undiluted several times a day.

**Smokers' Essence.**

Oil of peppermint,	
Oil of mace,	
Oil of thyme, of each.....	$\frac{1}{2}$ dram
Oil of lemon,	
Oil of rosemary,	
Oil of orange, of each.....	1 dram
Otto of roses .....	10 drops
Tincture of vanilla .....	1 ounce
Tincture of benzoin .....	2 ounces
Alcohol, enough to make.....	1 pint

Mix and filter. Use  $\frac{1}{2}$  teaspoonful to a glass of water for a mouth wash.

**Thoe's Mouth Wash.**

Saccharin .....	$\frac{1}{2}$ dram
Sodium bicarbonate.....	1 dram
Salicylic acid.....	4 drams
Alcohol, 95 per cent.....	1 pint

Mix and dissolve. A few drops in a glass of water, make a gargle, to be used frequently.

**Thum's Tooth Wash.**

Castile soap.....	6 drams
Alcohol .....	4 ounces
Glycerin .....	1 ounce
Oil of gaultheria .....	25 drops
Oil of lemon .....	10 drops
Water, sufficient quantity to make.....	8 fl. ounces

Dissolve the soap in 3 ounces of water and the oils in the alcohol, add all, shake and filter.

**Thymol Mouth Wash.**

Thymol .....	1 dram
Peruvian balsam.....	20 minims
Oil of peppermint .....	$\frac{1}{2}$ dram
Oil of cloves .....	2 drops
Oil of sage .....	4 drops
Alcohol, enough to make..	10 ounces

Mix and filter.

**Vining's Tooth Elixir.**

Cinnamon (crushed).....	¾ ounce
Unbleached Jamaica ginger (grated) .....	½ ounce
Cloves .....	1 dram
Saffron .....	1 dram
Oil of peppermint .....	½ dram
Oil of orange peel.....	½ dram
Otto of roses.....	10 drops
Rectified spirit.....	½ pint

Digest 15 days, decant, and filter. For toothache, foul breath, etc.

**Violet Mouth Wash.**

Tincture of orris.....	4 ounces
Spirit of rose.....	4 ounces
Alcohol .....	4 ounces
Oil of bitter almond.....	2 drops

Use 10 to 20 drops to a cup of warm water as a mouth wash.

**PERFUMERY.****Perfume Extracts.**

The finest perfumes are not made from essential oils, but from fatty extracts of the flowers. The freshly picked flowers are digested for six hours in a mixture of melted lard and suet, that has previously been prepared and purified. The fat is then separated from the plants and used again for a second extraction. This process is continued for a number of times, and the fatty extract afterward treated with alcohol, which dissolves the perfume and thus forms the liquid extract. The art of making fine perfume consists in the proper mixing of various extracts, tinctures and essences, and can be learned only by experience. Manufacturers of world-famed perfumes guard their formulas very carefully. The formulas given below are good working methods for making various perfumes on a small scale. Care should be taken to buy the best oils and extracts only.

**Synthetic Perfumes.**

During the last two decades a new industry of preparing synthetic perfumes has sprung up. The manufacture of these preparations is more or less complex and can be done only in specially prepared laboratories. The synthetic perfumes in the market may occur in the form of powders, crystals or scales, but they are mostly liquids resembling oils. The perfumes are made by dissolving these synthetic preparations in alcohol and the products are claimed to be, in some instances, superior to the natural odors. A number of good working formulas are given below:

**Alcohol for Perfume.**

In making perfumes, only the best deodorized alcohol should be used. Formulas for deodorizing alcohol are given elsewhere.

**Essence of Ambergris.**

Ambergris .....	80 grains
Powdered orris.....	2 drams
Alcohol .....	1 pint

Macerate for 14 days and filter.

**Essence of Ambergris (Compound Tincture of Ambergris).**

Ambergris .....	1 dram
Musk .....	½ dram
Oil of cinnamon .....	18 drops
Oil of rhodium .....	12 drops
Potassium carbonate.....	1½ drams
Alcohol .....	8 ounces

Macerate for 14 days and filter.

**Essence Bouquet.**

Thirty-two parts rose oil, 8 of ambra, 16 of iris, 2 of bergamot, and 1 of lemon.

**Essence Bouquet.**

Orris root .....	4 ounces
Sandal .....	4 ounces
Rose flowers .....	4 ounces
Orange peel .....	4 ounces
Musk .....	2 grains
Cumarin .....	4 grains
Vanilla .....	4 grains
Oil of rose .....	12 drops
Oil of bergamot .....	12 drops
Oil of neroli .....	5 drops
Oil of ylang ylang.....	5 drops
Oil of geranium .....	4 drops
Oil of cassia .....	5 drops
Oil of bitter almond.....	3 drops
Extract of jasmine.....	1 ounce

Macerate with 2 pints of alcohol for 14 days, filter and pass enough alcohol through the filter to make 2 pints.

**Essence Civet.**

Civet .....	1 dram
Powdered orris.....	½ ounce
Ammonium carbonate.....	10 grains
Alcohol .....	15 ounces
Water .....	1 ounce

Rub the civet and orris in a mortar. Dissolve the carbonate in the water, add the alcohol, mix with the drugs. Macerate for a month and filter.

**Compound Essence of Civet.**

Civet .....	1 dram
Ambergris .....	½ dram
Vanilla .....	¼ dram
Sugar of milk.....	1 dram

Reduce to a fine powder and add to Alcohol dilute..... 1 pint

Digest in a closed vessel for 3 days; filter.

**Fragrant Essence (Erdbeeressenz).**

Acetate amyl.....	2 drams
Acetic ether.....	12 drops
Dilute alcohol.....	2 ounces
Tincture of orris.....	8 ounces

**Compound Essence of Orris.**

Vanilla, cut very small...	2 drams
Orris root, bruised.....	6 drams
Essence of Peruvian balsam .....	1 ounce
Rectified spirit.....	15 ounces

Macerate fourteen days, and filter.

**Essence of Musk.**

Best musk.....	2 drams
Sugar of milk.....	2 drams
Triturate together, then add	
Distilled water.....	6 ounces
Alcohol .....	10 ounces
Ammonia water.....	1 dram

Macerate 8 days and filter.

**Essence of Musk.**

Musk .....	40 grains
Potassium carbonate.....	5 grains
Boiling water.....	1 ounce
Alcohol .....	9 ounces

Mix the first 3 ingredients, rub fine, when cold add the alcohol, macerate for 8 days, filter.

**Essence Musk and Ambergris.**

Musk .....	½ dram
Ambergris .....	1 dram
Sugar of milk .....	4 drams

Reduce to a powder and macerate in

Diluted alcohol..... 1 pint

Set aside for several days. Filter.

**Spiritus Melissa Compositus.**

Melissa, dried and cut, 8 parts; lemon peel, fresh cut, bruised nutmeg, bruised coriander, of each 2 parts; bruised cloves, bruised cinnamon, of each 1 part; alcohol, 55 parts; water, 70 parts. Macerate during 1 day and distill off 72 parts. The specific gravity of the distillate should be 0.906.

**Spirit of Rose Comp.**

Otto of rose ..... 2 drams  
Oil of rose geranium ..... 1 dram  
Alcohol, enough to make... 1 pint

Mix, shake, filter after 3 days.

**Tincture Musk.**

Tonquin musk..... 11 drams  
Rose water..... 8 drams  
Alcohol, best quality..... 2 quarts

Carefully empty the musk sacs into a glass flask, add the rose water and let the flask stand about 10 days, shaking frequently. Then add the alcohol, and let the whole stand for several weeks, shaking frequently. Cut up the empty musk sacs into as small pieces as possible, and, in another bottle, treat them in the same manner as their contents; distilled water may be used instead of rose water.

The extract from the empty musk sacs is used for cheaper products, or mixed with the extract from the contents of the sacs, according to whether a more or less fine quality of tincture is to be obtained.

**Tincture Musk.**

Tonquin musk..... 60 grains  
Powdered pumice stone.... 75 grains  
Alcohol ..... 14 ounces  
Aromatic spirit of ammonia ..... 40 drops

Rub the pumice and musk together, add the hot water and let stand 12 hours, then add the alcohol and ammonia and macerate for 4 weeks.

**Tincture Musk Ammoniated.**

Musk ..... 30 grains  
Ammonium carbonate..... 6 grains  
Intimately mix with—  
Alcohol ..... 1 ounce  
Distilled water..... 3 drams  
Oil of peppermint..... 4 drops

Rub the musk with the carbonate dissolved in the water, add alcohol and oil. Macerate for 2 weeks, filter.

**Tincture Orris Root.**

Pulverized orris root, best quality ..... 2 pounds  
Alcohol, best quality..... 3 quarts

Pulverize the root, bring it into a glass flask, and add the alcohol. Shake five or six times daily for 14 days. In straining off the mixture the entire contents of the flask should be poured upon a close linen cloth stretched over a tin vessel. The orris root powder remaining upon the cloth after the tincture has run off is returned to the flask, and fresh alcohol added in order to obtain a second extract.

**Tincture Orris, Compound.**

Orris root..... 6 drams  
Vanilla ..... 2 drams  
Tincture of Peru balsam.. 1 ounce  
Alcohol ..... 15 ounces

Macerate 14 days and filter.

**Tincture Peru Balsam.**

Peruvian balsam..... 1 ounce  
Alcohol ..... 9 ounces

Macerate 3 days, filter.

**Tincture Tonka Compound.**

Tonka beans, powdered... 6 drams  
Orris root..... 2 ounces  
Essence of ambergris..... ½ dram  
Oil of ylang ylang..... ½ dram  
Comp. tincture of orris... 4 ounces  
Oil of lemon ..... ½ dram  
Oil of rose ..... ½ dram  
Oil of bergamot ..... 1 dram  
Alcohol ..... 16 ounces

Macerate 14 days, filter.

**Tincture of Verbena.**

Oil of lemongrass ..... 3 drams  
Oil of lemon ..... 4 drams  
Alcohol ..... 1 pint

Mix, filter.

**Extract Bouquet d'Amour.**

Oil of lavender ..... 2 drams  
Oil of cloves ..... 1 dram  
Oil of bergamot ..... 1 dram  
Oil of rose ..... 2 drops  
Essence of ambergris ..... 5 drams  
Essence of vanilla ..... 5 drams  
Alcohol, enough to make.. 1 pint

Mix, after a month filter.

**Extract Bridal Bouquet.**

Oil of sandalwood..... 2 drams  
Extract of rose ..... 4 ounces  
Extract of jasmine ..... 4 ounces  
Extract of orange flowers . 16 ounces  
Essence of musk ..... 1 ounce  
Essence of vanilla ..... 1 ounce  
Tincture of storax ..... 2 ounces

Mix, after 14 days, filter.

**Extract Bouquet (Ess-Bouquet).**

Oil of rose ..... 40 drops  
Oil of neroli ..... 2 drops  
Essence of musk ..... 40 drops  
Extract of jasmine ..... 5 ounces  
Tincture of orris..... 8 ounces  
Alcohol, enough to make.. 4 pints

Mix and filter.

**Extract Bouquet (Ess-Bouquet).**

Oil of bergamot ..... 2 drams  
Oil of lemon ..... 1 dram  
Tincture of ambergris ..... 1 ounce  
Tincture of orris ..... 2 ounces  
Spirit of rose..... 4 ounces

Mix, filter.

**Extract Sweet Briar.**

Oil of neroli ..... 1 dram  
Oil of lemongrass ..... ½ dram  
Oil of lemon ..... ½ dram  
Oil of bergamot ..... 2 drams  
Essence of musk ..... ½ ounce  
Cassie extract..... 2 ounces  
Orange extract..... 4 ounces  
Spirit of rose, enough to make ..... 1 pint

Mix, and filter.

**Extract Frangipanni.**

Oil of bergamot..... 3½ drams  
Tincture of vanilla ..... 3½ drams  
Tincture of tolu ..... 2 drams  
Tincture of musk ..... 1½ drams  
Rose extract..... 1 ounce  
Cassie extract..... 1 ounce  
Jasmine extract..... 8 ounces  
Alcohol ..... 1 pint

Mix and filter.

**Heliotrope.**

Oil of bergamot..... 1½ ounces  
Vanillin ..... 8 grains  
Tincture of benzoin..... 2 drams  
Rectified spirit..... 60 ounces

Dissolve, filter in 8 days.



**Hyacinth.**

Hyacinthin .....	1 dram
Oil of neroli (bigarade)...	15 drops
Tincture of musk .....	1 dram
Tincture of benzoin.....	2 drams
Tincture of jasmín .....	2 ounces
Alcohol (deodorized).....	12 ounces
Orange flower water (triple)	2 ounces

Mix, macerate 14 days, filter.

**Extract Heliotrope, White,**

Heliotropin .....	2 drams
Extract of white rose .....	1 ounce
Extract of jasmine .....	1 ounce
Extract of musk .....	½ ounce
Alcohol .....	4 pints
Essence of neroli .....	4 ounces
Oil of bergamot .....	1 dram
Oil of bitter almonds .....	4 drops

Mix the first 5 ingredients separately, also the last three. Mix both after a week, let stand again a week and filter.

**Jockey Club (York).**

Extract of cassia .....	10 ounces
Extract of rose .....	20 ounces
Extract of jasmine .....	10 ounces
Extract of orris .....	12 ounces
Extract of violet .....	10 ounces
Oil of bergamot .....	3 drams
Extract of civet .....	2 ounces
Extract of musk .....	1½ ounces
Otto of rose .....	40 minims

Mix, let stand 14 days, filter.

**Jockey Club (York).**

Extract of jasmine .....	5 ounces
Extract of orris .....	20 ounces
Extract of musk .....	2½ ounces
Extract of vanilla .....	2 ounces
Otto of rose .....	90 minims
Oil of sandal .....	90 minims
Oil of bergamot .....	150 minims
Oil of neroli .....	40 minims
Benzoic acid .....	2 drams
Rectified spirit to make..	4 pints

Mix and filter in 2 weeks.

**Extract Jockey Club.**

Jasmine extract.....	4 ounces
Rose extract.....	1 ounce
Essence of musk.....	1 ounce
Tincture of tonka .....	2 ounces
Alcohol .....	9 ounces

Mix, let stand 2 weeks, filter.

**Lilac.**

Essence of tuberose .....	4 ounces
Essence of orange flower..	1 ounce
Tincture of civet (1 dram to 1 pint) .....	3 drams
Spirit of bitter almond (5 minims oil to 1 ounce alcohol) .....	20 minims

Mix and filter after 8 days.

**Lilv of the Valley.**

Extract of jasmine.....	40 ounces
Extract of ylang ylang..	6 ounces
Cadamom seeds, bruised..	2 ounces
Oil of orris.....	10 minims

Macerate for two weeks or a month if possible. If the odor of the cardamom is found to predominate, add extract of jasmine to neutralize it.

**Extract May Bells.**

Rose extract.....	10 ounces
Jasmine extract.....	10 ounces
Orange flower extract....	10 ounces
Cassie extract.....	10 ounces
Essence of vanilla.....	20 ounces
Oil of bitter almond .....	½ dram

Mix and after 8 days filter.

**Mary Stuart.**

Extract of rose .....	8 drams
Extract of jasmine .....	3 drams
Extract of musk .....	2 drams
Extract of ambergris .....	1 dram
Extract of vanilla .....	2 drams
Extract of florentine orris	4 drams
Alcohol, deodorized.....	32 drams

Mix and filter.

**Extract Millefleurs.**

Cumarin .....	10 grains
Oil of cinnamon .....	2 drops
Oil of rose .....	3 drops
Oil of neroli .....	5 drops
Oil of lemon .....	15 drops
Tincture of musk .....	15 drops
Tincture of benzoin .....	20 drops
Cologne spirit.....	2 ounces

Mix, let stand 8 days, filter.

**Extract New Mown Hay.**

Cumarin .....	12 grains
Essence of rose.....	½ dram
Cologne spirit.....	2 ounces

Mix and filter.

**Extract New Mown Hay.**

Tonka beans, cut.....	75 grains
Orris root.....	150 grains
Vanillin .....	8 grains
Oil of bergamot .....	30 drops
Oil of neroli .....	2 drops
Oil of rose .....	2 drops
Oil of lavender .....	2 drops
Oil of cloves .....	1 drop
Patchouli herb.....	3 grains
Benzoic acid.....	8 grains
Nettle herb.....	30 grains
Alcohol deodorized .....	7 troy ounces

Digest 14 days, and filter, adding enough alcohol to obtain 8 ounces.

**Extract Musk Bouquet.**

Otto of rose.....	15 drops
Tincture of tolu.....	1 ounce
Essence of musk.....	12 ounces
Jasmine extract, enough to	4 pints

Mix and filter.

**Extract Opoponax.**

Essence of cassia .....	1 pint
Essence of tuberose .....	1 pint
Essence of jasmine .....	½ pint
Tincture of orris .....	½ pint
Tincture of benzoin .....	¼ pint
Tincture of tolu.....	¼ pint
Tincture of ambrette seed	¼ pint
Tincture of musk .....	¼ pint
Rose water.....	¼ pint

Mix and filter.

**Extract Opoponax.**

Alcohol .....	26 ounces
Musk .....	½ dram
Vanilla .....	½ ounce
Tonquin beans.....	¼ ounce

Macerate for a month, filter and add:

Extract of orris .....	10 ounces
Extract of rose .....	10 ounces
Extract of orange flowers.	5 ounces
Extract of cassia .....	5 ounces
Extract of violet .....	16 ounces
Oil of citronella .....	13 minims
Oil of citron .....	60 minims
Oil of bergamot .....	60 minims
Oil of lemon .....	15 minims
Oil of patchouli .....	30 minims
Oil of rose .....	15 minims

**Extract Orange Flower Bouquet.**

Essence of musk .....	2 ounces
Essence of cassie .....	2 ounces
Extract of orange flowers.	12 ounces

Mix and filter.

**Persian Bouquet.**

Oil of rhodium .....	1 dram
Oil of rose .....	1 dram
Oil of bitter almond .....	20 drops
Oil of cloves .....	10 drops
Oil of petit grain .....	1 dram
Tincture of orris root .....	8 ounces
Tincture of vanilla .....	4 ounces
Tincture of musk .....	1 ounce
Rose water .....	4 ounces
Cologne spirit, quantity sufficient ad.....	4 pints

Mix the oils and the tinctures with the spirits, and lastly add the rose water; shake well; allow to stand 3 days and filter.

**Sweet Briar.**

Oil of lavender .....	40 drops
Oil of bergamot .....	80 drops
Oil of lemon .....	80 drops
Otto of rose .....	8 drops
Oil of verbenä .....	1 drop
Essential oil of almonds .....	1 drop
Essence of musk .....	120 drops
Rectified spirit.....	1 ounce

Mix and filter.

**Extract Sweet Peas.**

Cumarin .....	10 grains
Jasmine extract.....	1 ounce
Spirit of rose.....	5 ounces
Orange flower extract.....	5 ounces
Tuberose extract.....	5 ounces

Mix and filter.

**Victoria.**

Vanilla .....	½ dram
Yellow saunders.....	6 drams
Cloves .....	1 dram
Neroli .....	3 drops
Oil of lavender.....	6 drops
Alcohol .....	4 ounces

Digest for 3 days and add 4 ounces of orange flower water; distill 6 ounces, add essence of musk 1 dram.

**Victoria.**

Cloves, bruised.....	2 scruples
Vanilla, cut small.....	1 dram
Oil of cedrat .....	4 drops
Oil of sandal .....	1 dram
Cinnamon .....	12 grains
Oil of verbenä.....	8 drops
Otto of roses.....	8 drops
Oil of neroli .....	20 drops
Oil of lavender .....	1 dram
Ambergris .....	16 drams
Tincture of musk.....	1 dram
Alcohol .....	16 fl. ounces

Digest for a few days and filter. Or the whole, except the ambergris and musk, may be distilled in a water bath, and these added to the distilled spirit.

**White Heliotrope.**

Cumarin .....	16 grains
Vanillin .....	16 grains
Heliotropin .....	16 grains
Essence of rose from po- made .....	1 ounce
Essence of rose, "triple" .....	1 ounce
Oil of bitter almond.....	6 drops
Deodorized alcohol.....	6 ounces

Mix, macerate 8 days, filter.

**White Lilac.**

Extract of tuberose.....	20 ounces
Extract of rose .....	10 ounces
Extract of orange .....	7 ounces
Oil of almond.....	5 minims
Extract of civet.....	2/3 ounce

Mix and after days 8 filter.

**Extract White Heliotrope.**

Essence of neroli.....	4 ounces
Oil of bergamot.....	1 dram
Essence of oil of almond..	4 drops

Mix.

**White Rose.**

Oil of rose.....	15 drops
Patchouli herb .....	3 grains
Musk .....	3 grains
Deodorized alcohol.....	7 troy ounces

Digest 14 days, and filter.

**White Rose Perfume, Cheap.**

Otto of rose, 25 minims; oil of geranium, 10 minims; oil of patchouli, 3 minims; tincture of orris, 1 ounce; distilled water, 1 ounce; alcohol, sufficient to make 5 ounces. Mix, let stand 8 days, filter.

**Extract White Rose.**

Oil rose of geranium.....	10 drops
Otto of rose.....	25 drops
Jasmine extract.....	1 ounce
Tincture of orris.....	1 ounce
Water .....	1 ounce
Alcohol .....	5 ounces

Mix and filter.

**Extract Ylang Ylang.**

Oil of ylang ylang.....	370 grains
Oil of neroli, petale.....	48 drops
Oil of rose .....	115 drops
Oil of lemon .....	48 drops
Musk .....	16 drops
Alcohol (deodorized).....	30 pints

Mix and filter.

**Ylang Ylang.**

Orris root.....	12 ounces
Rose flowers.....	12 ounces
Orange peel.....	16 ounces
Cumarin .....	2 grains
Vanillin .....	4 grains
Civet .....	1 grain
Musk .....	1 grain
Oil of ylang ylang.....	30 drops
Oil of rose .....	20 drops
Oil of bergamot .....	10 drops
Essence of jasmine.....	1 ounce
Alcohol .....	1 gallon

Macerate the drugs for 8 days, shaking often. Filter, add the oils and enough alcohol to make 1 gallon.

**SOLID PERFUMES.****Solid Perfume.**

Oil of lavender .....	2 drams
Oil of cloves .....	1 dram
Oil of rose geranium.....	20 minims
Oil of bergamot .....	2 drams
Vanillin .....	10 grains
Glycerin .....	1 dram

This is sufficient for 4 ounces of paraffin. Melt the paraffin on a water bath, add the mixed perfumes, stir well, pour into a mold and allow to cool.

**Solid Perfume.**

Oil of linaloe.....	2 drams
Heliotropin .....	20 grains
Oil of bergamot .....	20 minims
Oil of lemon .....	20 minims
Glycerin .....	1 dram

Sufficient for 4 ounces of paraffin. Mix according to directions given in the preceding formulas.

**Solid Perfume.**

Oil of neroli .....	1 dram
Oil of rose geranium.....	1 dram
Oil of lavender .....	1 dram
Oil of bergamot .....	2 drams
Oil of cloves .....	4 minims
Heliotropin .....	20 grains
Glycerin .....	1 dram

This is sufficient for a half pound of paraffin.

Mix as in the preceding.

**Solid Perfume.**

Oil of ylang ylang.....	2 drams
Cumarin .....	20 grains
Essence of musk.....	20 grains
Oil of neroli .....	1 dram
Oil of sandalwood .....	30 minims
Glycerin .....	1 dram

Sufficient for 4 ounces of paraffin.

Mix as above.

**White Rose Solid Perfume.**

Oil of geranium .....	½ dram
Oil of bergamot .....	½ dram
Oil of patchouli .....	5 minims
Paraffin .....	4 ounces

Mix.

**Lavender Solid Perfume.**

Oil of lavender.....	2 ounces
Essence of bergamot.....	1 ounce
Oil of cassia .....	5 minims
Oil of geranium .....	40 minims
Oil of orange .....	5 minims
Wax or paraffin.....	2 pounds

Mix.

**Bouquet Solid Perfume.**

Oil of coriander .....	18 minims
Oil of cloves .....	2 minims
Oil of nutmeg .....	1 dram
Oil of lavender .....	3 drams
Oil of sandal .....	1 dram
Oil of bergamot .....	1 ounce
Otto of rose.....	½ dram
Oil of geranium .....	½ dram
Oil of orange .....	10 minims
Wax or paraffin.....	1 pound

Mix.

**Cologne Solid Perfume.**

Essence of bergamot.....	1 ounce
Essence of lemon.....	1 ounce
Oil of citronella .....	½ ounce
Oil of neroli .....	½ ounce
Oil of rosemary .....	80 minims
Oil of geranium .....	10 minims
Wax or paraffin.....	2 pounds

Mix.

**COLOGNE WATERS.**

A perfumed water, made in the city of Cologne, by the firm of Maria Farina, more than 200 years ago, and sold under the name of Eau de Cologne or Cologne Water (Kölnisches Wasser) met with such general approval all over the world, that the name "Cologne Water," or simply "Cologne," is now applied to a great variety of perfumed waters. They are all more or less imitations of the original perfume. Cologne waters are weaker in perfume than extracts and can be used more liberally on that account. They are solutions of essential oils in deodorized alcohol, and if made from selected and high grade material, are entirely volatile, leaving no trace of color after evaporation.

**Eau de Cologne.**

Oil of bergamot .....	2 drams
Oil of lemon .....	1 dram
Oil of neroli .....	20 drops
Oil of origanum .....	6 drops
Oil of rosemary .....	20 drops
Rectified spirit (treble dist.) .....	20 ounces
Orange flower water.....	1 ounce

Mix in above order.

**Eau de Cologne.**

Oil of bitter almond.....	5 minims
Oil of cloves .....	10 minims
Oil of rosemary .....	6 minims
Oil of citronella .....	6 minims
Oil of cassia .....	6 minims
Oil of origanum, pale.....	5 minims
Oil of rhodium .....	8 minims
Oil of lemon .....	1 dram
Oil of bergamot .....	2 drams
Oil of rose .....	5 minims
Essence of musk.....	2 drams
Orange flower water.....	6 ounces
Alcohol, enough to make..	40 ounces

Mix, let stand 8 days, and filter.

**Eau de Cologne, Double.**

Oil of petit grain.....	42 grams
Oil of neroli .....	35 grams
Oil of bergamot .....	32 grains
Oil of Portugal .....	32 grams
Oil of rosemary .....	30 grams
Oil of lavender .....	30 grams
Oil of orange .....	30 grams
Jasmine water.....	60 grams
Orange flower water.....	60 grams
Deodorized alcohol.....	10 pounds

Dissolve the oils in the alcohol; then add the waters. Allow the mixture to stand 14 days, and distill. Transfer the distillate to the bottles, and let it stand for at least 9 months before using it.

**Eau de Cologne, White's.**

Oil of bergamot .....	1 ounce
Oil of lemon .....	2 ounces
Oil of orange .....	2 ounces
Oil of rosemary .....	1 ounce
Oil of neroli .....	2 drams
Oil of rose geranium .....	4 drams
Oil of cloves .....	2 drams
Extract of musk.....	1 ounce
Orange flower water.....	1 pint
Alcohol .....	1 gallon

Mix and after 2 weeks, filter.

**Eau de Cologne, Eng.**

Oil of lavender .....	1 dram
Oil of neroli .....	2 drams
Oil of lemon .....	1½ drams
Oil of bergamot .....	3 drams
Oil of rose .....	3 minims
Musk .....	2 grains
Tonka, powdered.....	10 grains
Benzoin .....	20 grains
Alcohol .....	40 ounces

Digest for two or three days, and then add:

Powdered talcum..... 3 drams

Orange flower water..... 2 ounces

Let the mixture stand 7 days, then filter.

**Cologne.**

Oil of neroli .....	1 fl. dram
Oil of rosemary flowers.....	1 1/3 fl. drams
Oil of lemon .....	2 2/3 fl. drams
Oil of bergamot .....	1 1/3 fl. drams
Oil of sweet orange.....	3 1/3 fl. drams
Musk .....	2 grains
Cologne spirit.....	2 pints
Distilled water.....	½ pint

Mix, set aside 14 days and filter.

Rose water may be substituted in part for distilled water.



**Eau de Cologne, Maigloekchen.**

Alcohol, 85 to 96 per cent, best quality.....	2 gallons
Bergamot oil.....	3 ounces
Lemon oil.....	3 ounces
Neroli oil.....	6 drams
French extract of lavender oil.....	2 drams
Rosemary oil.....	1 dram
Best German balm oil....	½ dram
Ylang ylang oil.....	1 dram
Maigloekchen (lily of the valley) extract.....	2 pints

Dissolve the ylang ylang oil by itself in 1 pint of alcohol of the best quality, and when the solution is entirely clear, add it to the rest in a glass vessel. After standing for 14 days add carefully orange-blossom water and rose water each 1 pint; shake thoroughly and let the mixture stand quietly until perfectly clear.

**Cologne.**

Oil of neroli.....	½ fl. dram
Oil of jasmine.....	1 fl. dram
Oil of lavender flowers....	½ fl. dram
Oil of bergamot.....	4 fl. drams
Tincture of musk.....	1 fl. dram
Benzoinated tincture.....	6 fl. drams
Oil of Ceylon cinnamon....	¼ minim
Cologne spirit.....	2½ pints
Rose water.....	½ pint

Mix, set aside 14 days and filter.

**Cologne.**

Tincture of benzoin.....	½ fl. dram
Oil of lavender flowers....	½ fl. dram
Oil of rosemary flowers....	½ fl. dram
Oil of lemon.....	1 fl. dram
Oil of bergamot.....	1 fl. dram
Oil of sweet orange.....	2/3 fl. dram
Oil of rose geranium.....	5 minims
Oil of neroli.....	3 minims
Musk.....	1 grain
Cologne spirit.....	14 fl. ounces
Distilled water.....	2 fl. ounces

Mix, set aside 14 days, filter.

**Cologne.**

Oil of cloves.....	10 minims
Oil of cassie.....	5 minims
Oil of neroli.....	15 minims
Oil of rosemary flowers....	30 minims
Oil of lemon.....	4 fl. drams
Oil of bergamot.....	2 fl. drams
Oil of lavender flowers....	4 fl. drams
Benzoinated tincture.....	2 fl. drams
Powdered Florentine orris	1 ounce
Cologne spirit.....	6 pints
Rose water.....	1 pint
Distilled water.....	1 pint

Macerate one month and filter.

**Cologne.**

Oil of bergamot.....	2 drams
Oil of lemon.....	1 dram
Oil of neroli, big.....	20 drops
Oil of origanum flowers....	6 drops
Oil of rosemary flowers....	20 drops
Cologne spirit.....	1 pint
Orange flower water.....	1 ounce

Mix, let stand 14 days and filter.

**Cologne.**

Cologne spirit.....	3 pints
Extract of rose.....	1 pint
Extract of musk.....	¾ ounces
Tincture of ambergris.....	4 ounces
Tincture of vanilla.....	2 ounces
Tincture of orris.....	¾ ounces
Tincture of tonka.....	4 ounces

Mix, let stand 14 days and filter.

**Cologne.**

Oil of lavender.....	1 dram
Oil of bergamot.....	2 drams
Oil of lemon.....	2 drams
Alcohol.....	4 pints
Distilled water.....	4 ounces
Orris root.....	1 ounce
Tincture of benzoin.....	½ ounce
Vanilla.....	10 grains
Musk.....	1 grain
Jasmine.....	½ ounce

Mix. Let stand for some time, then filter.

**Cologne.**

Bergamot oil.....	2 drams
Oil of lemon.....	2 drams
Oil of origanum.....	6 drops
Oil of rosemary.....	20 drops
Alcohol.....	1 pint
Orange flower water.....	1 ounce

Mix, let stand 14 days and filter.

**Cologne.**

Cologne spirit.....	3 quarts
Oil of lemon.....	5 drams
Oil of bergamot.....	4 drams
Portugal oil.....	¾ drams
Neroli oil.....	¾ dram
Petit grain oil.....	½ dram
Rosemary oil.....	½ dram
Lavender oil.....	25 drops
Oil of cloves.....	6 drops
Extract Pomn. jasmine....	4 ounces
Warm water.....	32 ounces

Mix, set aside for two weeks and filter.

**Cologne.**

Oil of lavender, finest....	2 drams
Oil of neroli.....	2 drams
Oil of lemon.....	10 drams
Oil of bergamot.....	25 drams
Musk.....	1 grain
Alcohol (deodorized).....	4 pints

Mix, set aside for a few days, repeatedly shaking, then filter. The musk is to be saturated with a little water before being added.

**Cologne Water, First Quality.**

Oil of lemon.....	2 ounces
Oil of bergamot.....	2 ounces
Oil of neroli.....	½ ounce
Extract of lavender.....	1 dram
Oil of rosemary.....	1 dram
Deodorized alcohol.....	1 gallon
Orange flower water.....	½ pint
Rose water.....	½ pint

Mix in the order given, let stand 4 weeks, shaking often and filter.

**Cologne (First Quality).**

Oil of neroli, best.....	6 drams
Oil of rosemary.....	3 drams
Oil of bergamot.....	3 drams
Oil of cedrat.....	7 drams
Oil of orange peel.....	7 drams
Deodorized alcohol.....	1 gallon

Let stand 1 week and filter.

**Caroline Cologne.**

Oil of bergamot,	
Oil of lavender,	
Oil of rosemary,	
Oil of lemon, of each.....	1½ ounces
Oil of citronella,	
Oil of neroli,	
Essence of musk,	
Oil of cloves, of each....	1 dram
Alcohol.....	4 pints
Rose water.....	2 pints

Dissolve the oils in the alcohol, add the rose water and filter.

**Cologne (Ordinary).**

Oil of lavender .....	½ ounce
Oil of rosemary .....	½ ounce
Oil of bergamot .....	1 ounce
Oil of lemon .....	2 ounces
Oil of cloves .....	½ dram
Deodorized alcohol.....	1 gallon

Mix, let stand 1 week and filter.

**Cologne, Antiseptic.**

Eau de cologne.....	8 ounces
Chloral hydrate .....	2 drams
Quinine alkaloid.....	10 grains
Carbolic acid .....	30 grains
Oil of lavender.....	20 drops

Mix, filter.

**Euclid Avenue Cologne.**

Oil of orange .....	2 drams
Oil of lemon .....	1 dram
Oil of rosemary .....	1½ drams
Oil of neroli .....	5 drops
Oil of rose .....	5 drops
Spirit of musk.....	2 drams
Tincture of cardamom....	3 drams
Alcohol .....	24 ounces
Water .....	8 ounces
Tonka bean, cut.....	2 ounces
Powdered orris root.....	1 ounce

Dissolve the oils in the alcohol, then add the rest of the ingredients; macerate for 10 days, filter through animal charcoal and paper.

**Farina Cologne.**

Oil of neroli .....	1 dram
Oil of lemon .....	4 drams
Oil of lavender .....	½ dram
Deodorized spirit.....	14 ounces

Rose water sufficient to bring the mixture up to 1 pint.

Macerate three months and filter.

**Farina Cologne.**

Oil of neroli .....	5 drams 20 drops
Oil of rosemary flowers..	1 dram 20 drops
Cologne spirit.....	6 pints
Orange flower water....	2 pints

Mix them. Set aside for 20 days; filter through talcum and paper.

**Golden Farina Cologne.**

Tincture of Canada snake root .....	4 ounces
Tincture orris root.....	12 ounces
Oil of lavender, .....	
Oil of bergamot, .....	
Oil of lemon, of each.....	6 drams
Essence of musk, .....	
Oil of neroli, .....	
Oil of cinnamon, .....	
Oil of cloves, of each.....	1 dram
Orange flower water.....	8 ounces
Cologne spirit, sufficient to complete .....	6 pints

Mix, set aside for 14 days, shaking occasionally, and filter.

**Frou Frou Cologne.**

Oil of neroli .....	½ ounce
Oil of lavender flowers .....	
(French) .....	½ ounce
Oil of cloves .....	2 drams
Oil of rose .....	1 dram
Tincture of musk.....	2 ounces
Tincture of orris.....	8 ounces
Orange flower water.....	6 ounces
Cologne spirit (deodorized alcohol), enough to make .....	4 pints

Mix the oils and tinctures with the spirit; shake well and gradually add the orange flower water; then allow to stand three days and filter.

**Fenner's Golden Gem Cologne.**

Oil of lemon .....	3 ozs., 3 drs.
Oil of bergamot .....	6 ozs., 6 drs.
Oil of lavender flowers...	1 oz., 1 dr.
Oil of neroli .....	6 drams
Oil of rose .....	1 ounce
Cologne spirit.....	4½ gallons
Water .....	4 pints
Extract of musk.....	4 ounces

Mix thoroughly and let stand three weeks.

**Cologne Water, French.**

Oil of bergamot .....	1½ drams
Oil of Portugal .....	1½ drams
Oil of lemon .....	1½ drams
Oil of neroli .....	15 drops
Oil of rosemary .....	15 drops
Alcohol, enough to make..	2 pints

Mix.

**Cologne Water.**

Benzoin (purified).....	2 ounces
Oil of lavender .....	4 ounces
Oil of rosemary .....	2 ounces
Stronger alcohol.....	9 gallons

To this solution are added successively:

Oil of sweet orange....	20 4-5 ounces
Oil of lemon .....	20 4-5 ounces
Oil of bergamot .....	20 4-5 ounces

Macerate for some weeks; then fill into flasks.

**German Cologne.**

Alcohol .....	5 gallons
Oil of lemon .....	4 ounces
Oil of bergamot .....	4 ounces
Oil of neroli .....	1 ounce
Oil of sandalwood .....	2 ounces
Camphor .....	¼ ounce

Let it stand 14 days.

**German Cologne.**

Oil of lavender.....	1 dram
Tincture of benzoin.....	1 dram
Oil of rosemary flowers...	30 drops
Oil of neroli .....	3½ drams
Oil of lemon .....	2½ drams
Oil of orange .....	4½ drams
Oil of bergamot .....	6 drams
Oil of rose geranium.....	2 drops
Alcohol .....	2 pints
Orange flower water.....	1 ounce

Filter through magnesium carbonate and paper.

**Cologne, Improved.**

Siam benzoin.....	15 grains
Oil of lavender .....	30 grains
Oil of rosemary (flowers). ..	15 grains
Oil of neroli, bigarade.....	80 grains
Oil of petit grain.....	80 grains
Oil of cedrat .....	80 grains
Oil of Portugal .....	80 grains
Oil of lemon .....	160 grains
Oil of bergamot .....	150 grains
Oil of rose geranium.....	150 grains
Alcohol, 95 per cent.....	68 fl. ounces

The essential oils (all by weight) are dissolved in the order given above in the spirit, and then the finely powdered benzoin is added. Allow to stand with frequent agitation for at least four weeks; place in a still, add an equal quantity of water and distill over about 64 fluid ounces, having previously collected and set aside the first ounce. Allow the distillate (64 fluid ounces) to stand another four weeks in a glass vessel, which is exposed to sunlight or diffused daylight; the longer the water is kept the better it is.

**Portugal Cologne.**

Oil of orange peel.....	8 ounces
Oil of lemon .....	2 ounces
Oil of bergamot .....	1 ounce
Oil of rose .....	2 drams
Alcohol .....	1 gallon

Mix, filter.

**Jockey Club Cologne.**

Oil of bergamot .....	2 ounces
Oil of lemon .....	2 drams
Oil of lavender .....	1 dram
Oil of neroli .....	1 dram
Oil of cinnamon .....	10 drops
Oil of cloves .....	5 drops
Essence of jasmine.....	2 ounces
Tincture of vanilla .....	1 ounce
Tincture of musk .....	1 dram
Tincture of ambergris ...	1 dram
Otto of roses .....	10 drops
Cologne spirit, 95 per cent, enough to complete.....	1 gallon

Macerate together for three or four weeks,  
and filter.

**Cologne, With Musk.**

Oil of neroli .....	2 drams
Oil of rose geranium.....	1 dram
Tincture of musk .....	4 ounces
Tincture of orris .....	4 ounces
Tincture of civet .....	2 drams
Deodorized alcohol.....	3½ pints

Mix, set aside for 4 weeks and filter.

**Newport Cologne.**

Oil of yellow sandal.....	1½ drams
Oil of patchouli .....	1½ drams
Oil of lavender flowers...	6 drams
Oil of bergamot .....	1½ drams
Oil of white thyme.....	4 drams
Oil of cloves .....	4 drams
Oil of neroli .....	1½ drams
Oil of rose geranium.....	4 drams
Tincture of orris .....	6 ounces
Tincture of musk .....	3 ounces
Tincture of ambergris ...	3 ounces
Tincture of civet .....	3 ounces
Cologne spirit (deodorized alcohol) q. s. to make...	1 gallon

Mix, set aside 4 weeks, filter.

**Orange Blossom Cologne.**

Oil of rosemary flowers...	1 dram
Oil of orange, sweet.....	1 dram
Oil of neroli, bigarade ...	1 dram
Orange flower water.....	2 ounces
Cologne spirit.....	1 pint

Mix and set aside 4 weeks, filter.

**Prize Cologne.**

Essence of bergamot.....	2 drams
Essence of lemon.....	1 dram
Oil of neroli .....	20 drops
Oil of origanum .....	6 drops
Oil of rosemary .....	20 drops
Deodorized alcohol.....	1 pint
Orange flower water.....	1 ounce

Mix, set aside 10 days and filter.

**Triple Cologne.**

Oil of cedrat .....	1 dram
Oil of bergamot .....	1 dram
Oil of neroli .....	10 drops
Oil of lavender flowers...	10 drops
Oil of rosemary flowers...	10 drops
Oil of cinnamon, Ceylon..	5 drops
Oil of cloves .....	5 drops
Extract of musk.....	10 drops
Tincture of benzoin.....	1 dram
Cologne spirit.....	1 pint

Mix and filter.

**White Rose Cologne.**

Triple extract of white rose .....	1 ounce
Oil of rose .....	3 drops
Oil of rose geranium.....	3 drops
Cologne spirit.....	26 ounces
Hot water .....	6 ounces
Coloring, quantity sufficient.	

Mix, allow to stand 2 weeks and filter.

**Cologne for Sick Room.**

Salicylic acid.....	½ dram
Diluted alcohol.....	4 fl. ounces
Oil of cinnamon .....	1 drop
Oil of bergamot .....	15 drops
Balsam of Peru.....	½ fl. dram

Make a solution.

In order to make a clear solution of the above formula, dissolve the balsam of Peru in the spirit and filter, then adding balance of ingredients. The aromatics used in perfuming the above solution are as nearly chemically compatible to salicylic acid as practicable.

**Cologne for Sick Room.**

Salicylic acid.....	20 grains
Oil of gaultheria.....	5 drops
Diluted alcohol.....	2 fl. ounces

Mix.

In the above recipe, in the place of the oil of gaultheria, use the same amount of oil of anise, which is also of itself a useful deodorizer, and may be preferred by many.

**Cologne for Sick Room.**

Salicylic acid.....	20 grains
Farina cologne.....	2 fl. ounces

Mix.

**Superior Bouquet.**

Triple extract of jasmine.1½	drams
Oil of bergamot .....	50 drops
Oil of lemon .....	5 drops
Oil of lavender .....	3 drops
Oil of cloves .....	1 drop
Oil of orris .....	1 drop
Civet .....	1/3 grain
Cumarin .....	¾ grain
Heliotropin .....	1/6 grain
Alcohol .....	5 ounces

Mix and dissolve, filter after 2 weeks.

**Cologne for the Sick Room.**

Salicylic acid.....	10 grains
Thymol .....	10 grains
Menthol .....	5 grains
Cologne .....	8 ounces

Mix and dissolve.

**SYNTHETIC PERFUMES.**

During the last two decades the manufacture of synthetic perfumes has become a large and important industry. Originally based on the desire to offer good substitutes for expensive extracts and oils, like oils of rose and neroli, the chemistry of these products soon extended to the whole field of flavoring and perfumery extracts and has produced wonderful results. Nearly every flavor and odor are thus imitated and in many instances their delicacy and sweetness surpassed. All perfume formulas which are based on floral pomades can very easily be adjusted so that synthetic materials can be employed by merely using the modern equivalent of the old-fashioned material. For instance, instead of using a washing made from rose pomade or jasmine pomade, a solution of synthetic "Rose-C," or "Jasmine-C," will answer the same purpose at much less expense and without any trouble, as the solution can be made instantly.

**Making Synthetic Perfumes.**

Considerable experience and skill are required to make synthetic perfumes from the synthetic extracts, and as a simple dilution with alcohol is in most cases not satisfactory.



A good perfume, for instance, should contain the right fixative, and usually some sweetening agent is added in small proportions to make it more agreeable.

### Formulas for Synthetic Perfumes.

The formulas for using the extracts, the fixative and sweetening vary, of course, with the different manufacturers who prepare the synthetic perfumes. It is natural that they will not divulge their formulas, on which, to some extent, their business depends. However, anyone wishing to prepare his perfumery from synthetic concentrations, will receive all desired information from the manufacturer, who will send him formulas confidentially. For instance: Irol, Iorional, Irol-E and Violet-C are items which are largely used in making violet toilet water. But these products need certain additions, sometimes in minute quantities, to bring out the odor in its fullness and sweetness. Only the manufacturers can furnish the exact formulas for such preparations, and will gladly do so upon application by their customers.

However, as showing some of the combinations in which these synthetic products are employed, the following formulas are submitted:

#### Cherry Blossom.

Aubepine .....	5 drops
Anethol .....	1 drop
Oil of bitter almond.....	15 minims
Oil of fennel .....	15 minims
Oil of bergamot .....	15 minims
Oil of neroli .....	75 minims
Acetic ether .....	45 minims
Vanillin .....	30 grains
Cumarin .....	5 grains
Tincture of musk .....	6 fl. drams
Tincture of Siam benzoin.....	2½ fl. ounces
Stronger tincture of orris.....	8 fl. ounces
Essence of rose (3rd washings) .....	15 fl. ounces
Alcohol .....	4 fl. ounces

Mix.

#### Clove Pink.

Hyacinthine .....	5 minims
Essence of rose.....	2 fl. ounces
Otto of rose.....	3 minims
Cumarin .....	10 grains
Essential oil of almond.....	5 minims
Heliotropin .....	10 grains
Caryophyllin .....	60 minims
Oil of cloves.....	4 minims
Essence of jasmine.....	15 fl. ounces
Essence of jonquille.....	2 fl. ounces
Oil of orris.....	2 minims
Glycerin .....	4 drams
Terpineol .....	5 minims
Rectified spirit, enough to make .....	25 fl. ounces

Mix.

#### Heliotrope.

Heliotropin .....	30 grains
Essence of jasmine.....	4 fl. ounces
Oil of ylang ylang.....	5 minims
Crataegin .....	1 grain
Oil of neroli .....	10 minims
Oil of lignaleo .....	30 minims
Terpineol .....	10 minims
Otto of rose.....	5 minims
Rectified spirit.....	10 fl. ounces

Mix.

#### Heliotrope.

Heliotropin .....	30 grains
Vanillin .....	½ grain
Cumarin .....	4 grains
Tincture of musk.....	45 minims
Oil of ylang ylang.....	15 minims
Geraniol .....	10 grains
Benzaldehyde .....	1½ grains

Mix.

#### Crabapple.

Hyacinthine .....	5 minims
Crataegine .....	10 grains
Oil of ylang ylang.....	30 minims
Volatile oil of nutmeg.....	10 minims
Oil of lignaleo.....	20 minims
Methyl salicylate .....	2 minims
Musc Baur .....	10 grains
Extract of cassie .....	2 fl. ounces
Extract of violet .....	4 fl. ounces
Tincture of orris.....	1 fl. ounce
Glycerin .....	30 minims
Extract of jasmine.....	4 fl. ounces

Mix.

#### German Chypre.

Extract of jasmine .....	2 parts
Extract of rose .....	2 parts
Extract of tuberose .....	4 parts
Tincture of Abel musk .....	1 part
Tincture of orris .....	2,000 parts
Tincture of musk .....	500 parts
Cumarin .....	5 parts
Heliotropin .....	10 parts
Vanillin .....	5 parts
Oil of bergamot .....	20 parts
Oil of rose .....	20 parts
Oil of patchouli .....	10 parts
Oil of sandalwood .....	5 parts
Oil of rose geranium.....	40 parts

Mix.

#### Heliotrope.

Vanillin .....	10 grains
Oil of ylang ylang.....	30 minims
Oil of lignaleo.....	30 minims
Essence of tuberose .....	5 fl. ounces
Essence of ambrette .....	2 fl. ounces
Essence of jasmine .....	10 fl. ounces
Glycerin .....	4 drams
Heliotropin .....	90 grains
Oil of sweet orange.....	2 minims
Otto of rose.....	5 minims
Oil of bitter almond.....	5 minims
Cumarin .....	30 grains
Essence of civet.....	2 drams
Rectified spirit, enough to make .....	25 fl. ounces

Mix.

#### Heliotrope, German.

Heliotropin .....	40 grains
Vanillin .....	6 grains
Cumarin .....	4 grains
Essence of musk.....	40 minims
Oil of ylang ylang.....	15 minims
Geraniol .....	8 minims
Benzaldehyde .....	2 minims
Alcohol (cologne spirit, 80 per cent) .....	40 fl. ounces

Mix.

Allow to stand in a warm place for a few days, and then remove to a cool place and stand aside for a few weeks to macerate.

#### Hyacinth.

Geranyl acetate .....	3 minims
Essence of jasmine.....	10 ounces
Vanillin .....	10 grains
Oil of neroli .....	20 minims
Hyacinthine .....	25 minims
Essence of ambrette.....	1 ounce
Cumarin .....	20 grains
Essence of rose.....	3 fl. ounces
Glycerin .....	4 drams
Rectified spirit, enough to make .....	25 fl. ounces

Mix.

#### Lily of the Valley.

Oil of lignaleo, synthetic.....	90 grains
Oil of neroli .....	30 grains
Oil of jasmine, synthetic.....	15 grains
Amyl butyrate.....	20 drops
Tincture of musk.....	30 drops
Alcohol, enough to make.....	25 fl. ounces

Mix.

**Lilac.**

Essence of jasmine .....	5 fl. ounces
Essence of rose .....	5 fl. ounces
Oil of ylang ylang.....	60 minims
Heliotropin .....	20 grains
Essence of tuberose .....	10 fl. ounces
Essence of civet .....	1 dram
Terpineol .....	6 fl. drams
Essence of ambrette.....	1 fl. ounce
Glycerin .....	4 drams
Rectified spirit, enough to make .....	25 fl. ounces

Mix.

**Maybells.**

Cumarin .....	10 grains
Heliotropin .....	40 grains
Caryophyllin .....	20 minims
Oil of linaloe .....	20 minims
Oil of sweet orange .....	2 minims
Oil of neroli .....	5 minims
Terpineol .....	2 drams
Essence of jasmine .....	8 ounces
Essence of jonquille .....	4 ounces
Essence of rose .....	6 ounces
Essence of cassie .....	2 ounces
Essence of ambrette .....	4 ounces
Glycerin .....	4 drams
Rectified spirit, enough to make .....	25 fl. ounces

Mix.

**Narcissus Essence.**

Caryophyllin .....	10 minims
Extract of tuberose .....	16 fl. ounces
Extract of jasmine .....	4 fl. ounces
Oil of neroli .....	20 minims
Oil of ylang ylang .....	20 minims
Oil of cloves .....	5 minims
Glycerin .....	30 minims
Solution of amyl acetate (10%) .....	20 minims

Mix.

**Parma Violet.**

Ionone .....	3 drams
Tincture of benzoin.....	2 drams
Oil of bitter almond .....	10 minims
Oil of neroli (petale).....	10 minims
Extract of jasmine.....	1 ounce
Tincture of orris.....	1 ounce
Rectified spirit (60%).....	16 ounces
Water .....	4 ounces

Mix.

**New Mown Hay.**

Cumarin .....	8 grains
Vanillin .....	4 grains
Weaker tincture of orris..	16 fl. ounces

Mix.

**Violet.**

Essential oil of orris .....	5 minims
Essential oil of sweet orange .....	1 minim
Essence of tuberose .....	2 ounces
Essence of orris .....	5 ounces
Oil of lavender .....	2 minims
Oil of ylang ylang .....	10 minims
Glycerin .....	4 drams
Ionone .....	30 minims
Anethol .....	2 minims
Essence of cassie.....	4 drams
Oil of linaloe.....	3 minims
Heliotropin .....	10 grains
Essence of violet, enough to make .....	25 fl. ounces

Mix.

**White Heliotrope.**

Heliotropin .....	75 minims
Oil of cloves.....	1 drop
Cumarin .....	15 grains
Oil of jasmine.....	2 fl. drams
Cologne spirit.....	32 fl. ounces

Mix.

**White Iris.**

Ionone .....	3 minims
Oil of orris.....	10 minims
Heliotropin .....	30 grains
Terpineol .....	60 minims
Oil of ylang ylang.....	20 minims
Oil of linaloe.....	5 minims
Solution of amyl acetate, 10% .....	5 minims
Glycerin .....	20 minims
Essence of jasmine, enough to make.....	10 fl. ounces

Mix.

**White Lilac.**

Terpineol .....	3 drams
Heliotropin .....	30 grains
Extract of rose.....	2 fl. ounces
Oil of ylang ylang.....	10 minims
Extract of jasmine.....	4 fl. ounces
Rectified spirit, enough to make .....	20 fl. ounces

Mix.

**White Lilac (Cheap).**

Terpineol .....	40 minims
Oil of bergamot.....	30 minims
Cumarin .....	5 grains
Vanillin .....	5 grains
Tincture of benzoin.....	1 fl. ounce
Alcohol, 80%, enough to make .....	20 fl. ounces

Mix.

**White Violet.**

Ionone .....	60 minims
Oil of orris.....	10 minims
Musc Baur.....	10 grains
Extract of violet.....	18 fl. ounces
Extract of rose.....	2 fl. ounces
Oil of orange, sweet.....	5 minims
Oil of neroli.....	5 minims
Tincture of orris.....	4 fl. ounces
Heliotropin .....	30 grains
Terpineol .....	5 minims
Extract of patchouli (1:10)	20 minims
Glycerin .....	30 minims

Mix.

**"1897."**

Terpineol .....	2 drams
Oil of lavender .....	4 drams
Oil of bergamot .....	30 minims
Oil of sandal .....	30 minims
Caryophyllin .....	30 minims
Oil of ylang ylang .....	20 minims
Oil of petit grain .....	10 minims
Oil of pimenta .....	20 minims
Heliotropin .....	20 grains
Gardenia .....	5 grains
Aubepine .....	10 minims
Vanillin .....	30 grains
Nerolin .....	10 grains
Essence of jasmine .....	12 fl. ounces
Essence of cassie .....	4 fl. ounces
Essence of civet .....	30 minims
Essence of orange .....	4 fl. ounces
Glycerin .....	4 drams
Rectified spirit, enough to make .....	25 fl. ounces

Mix.

**Synthetic Perfume for Programmes.**

Cumarin .....	10 grains
Vanillin .....	10 grains
Heliotropin .....	10 grains
Ionone .....	10 minims
Hyacinthine .....	5 minims
Essence of musk.....	30 minims
Otto of rose.....	5 minims
Absolute alcohol.....	1 fl. ounce

Mix and distribute evenly on blotting paper. Place this in a closed tin box with the programmes for 24 hours or so. The odor is said to be almost inexhaustible.

**Wallflower.**

Terpineol .....	4 drams
Oeliet .....	3 drams
Ionone .....	20 minims
Heliotropin .....	1 dram
Cumarin .....	10 grains
Oil of cassia.....	30 minims
Triple orange-flower water	2 ounces
Rectified spirit, enough to make .....	25 ounces

Mix.

**TOILET WATERS.****Toilet Waters.**

Toilet waters differ from the extracts mainly by the fact that they are more diluted and may be used more freely. Why they should be called "waters" is not clear, for they have been prepared with alcohol from the earliest times. Like Cologne water, which is a special kind of toilet water, there are certain groups that are rarely prepared as extracts, such as "Florida Water", etc., while others, as "Violet Water", are simply diluted extracts. They are prepared from the fatty extracts, or pomades, of the fresh plants in the larger manufacturing houses; but on a small scale solutions of aromatic oils in alcohol, or diluted alcohol, take their places and very delicate and satisfactory toilet waters can thus be prepared.

**Toilet Water.**

Oil of lavender flowers ...	2 drams
Oil of lemon .....	2 drams
Tincture of turmeric .....	1 dram
Oil of neroli .....	1 dram
Oil of balm .....	30 drops
Oil of rose .....	10 drops
Alcohol .....	1 quart
Dilute alcohol.....	1 quart

Mix the oils with the alcohol, then with the dilute alcohol. The finished product will mix with water and makes a fine barbers' toilet water.

**Toilet Water, Fine.**

Oil of bergamot .....	15 drops
Oil of lemon .....	25 drops
Oil of neroli .....	20 drops
Oil of rosemary .....	15 drops
Alcohol .....	8 ounces
Water .....	8 ounces

Dissolve the oils in the alcohol and add the water slowly. Set aside for 8 days, shaking occasionally and filter.

**Aqua Atheniensis.**

Borax .....	1.5
Dissolve in .....	
Glycerin .....	30.0
Rose water .....	100.0

Then mix with

Musk cologne water.....	20.0
Tincture of quillaja .....	50.0

Stand aside several days and filter.

**Eau de Brettfield.**

Orris root powder.....	3 ounces
Cologne spirit.....	2 pints
Oil of lemon .....	1 dram
Oil of rose .....	50 drops
Oil of neroli .....	50 drops
Musk .....	1 grain
Alcohol .....	5 ounces

Macerate the orris root in the cologne spirit for 3 days. Dissolve oils and musk in the alcohol for 3 days. Filter both and mix. Let stand 8 days and filter.

**Aqua Mellis.**

Coriander seed.....	7 pounds
Cloves .....	12 ounces
Storax .....	8 ounces
Nutmegs (bruised).....	8 ounces
Lemon peel.....	10 ounces
Calamus .....	6 ounces
Proof spirit.....	15 pints
Water .....	8 pints

Macerate for a month in a closed vessel, then distill 22 pints, and to the distillate add:

Orange flower water.....	5 pints
Rose oil.....	24 drops
Ambergris .....	1 grain
Vanilla .....	2 ounces

Macerate for 8 days and filter.

**Carbolic Toilet Water.**

Crystallized carbolic acid.	2 drams
Essence of millefleurs.....	15 drops
Tincture of quillaja saponaria .....	1 ounce
Water .....	1 quart

Mix and filter.

**Eau de Bouquet.**

Oil of lavender .....	½ dram
Oil of neroli .....	8 drops
Oil of rose .....	½ dram
Oil of bergamot .....	24 minims
Essence of musk .....	2½ drams
Essence of ambergris ...	5 drams
Alcohol .....	8 ounces

Mix, set aside 8 days, filter.

**Eau de Luce.**

Tincture of ambergris ..	10½ ounces
Tincture of benzoin ....	½ pound
Oil of lavender.....	150 grains
Water of ammonia.....	1½ pounds

The tinctures are mixed with the ammonia by agitation, and immediately filled into bottles; the liquid should have a milky appearance. At times 150 grains of white soap is added, which aids in imparting to the liquid the desired milky appearance. In fine Eau de Luce the odor of ambergris should predominate; this can easily be effected by increasing the amount of tincture of ambergris.

**Eau de Toilet (Lubin's).**

Orris tincture.....	1 ounce
Tolu tincture.....	3 drams
Musk tincture.....	12 drops
Mousseline extract.....	3 drops
Lavender oil.....	16 drops
Bergamot oil.....	30 drops
Clove oil.....	1 drop
Ylang ylang oil.....	5 drops
Alcohol .....	2½ ounces

Mix, after 8 days, filter.

**Eau de Vie de Lavande  
Double Ambree.**

Alcohol, best quality.....	4 pints
Lavender oil, best quality	1 ounce
French rose geranium oil	3 drams
Oil of cassia .....	3 drams
Oil of bergamot .....	3 drams
Oil of lemon .....	3 drams
Oil of French petit-grain.	3 drams
Peru balsam .....	2 ounces
Orris root tincture.....	1½ pints
Ambergris tincture.....	2 ounces
Musk tincture.....	1 dram
Storax tincture.....	3 ounces
Tolu-balsam tincture....	2 ounces
Benzoin tincture.....	2 ounces

No water should be added.

Mix, let stand 14 days, shaking occasionally, filter.



**Eucalyptus Toilet Water.**

Balsam Peru .....	20 minims
Tincture of tolu .....	80 minims
Tincture of benzoin .....	80 minims
Tincture of tonka beans .....	120 minims
Tincture of vanilla .....	160 minims
Tincture of musk .....	100 minims
Oil of eucalyptus .....	30 minims
Oil of neroli .....	4 minims
Rose water .....	6 ounces
Orange flower water .....	6 ounces
Oil of bergamot .....	8 ounces

Mix, macerate 8 days and filter.

On addition of sufficient glacial acetic acid this will produce a good eucalyptus toilet vinegar.

**Florida Water.**

Oil of bergamot.....	8 ounces
Oil of orange .....	4 ounces
Oil of lavender (best) .....	3 ounces
Oil of cloves .....	1½ ounces
Oil of cinnamon (true) .....	¼ ounce
Tincture of orris .....	½ pint
Tincture of Peru balsam .....	¼ pint
Alcohol, 95 per cent.....	4 gallons
Water .....	6 pints

Mix, and allow to stand for several days before filtering and bottling.

**Florida Water.**

Oil of lavender .....	4 ounces
Oil of bergamot .....	4 ounces
Oil of cinnamon .....	2 drams
Oil of cloves .....	1 dram
Oil of neroli .....	2 drams
Musk, pure .....	4 grains
Cologne spirits, 95 per cent .....	1 gallon
Water .....	½ gallon

Macerate 15 days and filter through paper.

**Florida Water.**

Oil of lavender .....	4 ounces
Oil of lemon .....	1 ounce
Oil of orange peel .....	1 ounce
Oil of cloves .....	5 drams
Deodorized alcohol .....	1 gallon

Mix and filter.

**Florida Water.**

Oil of bergamot .....	5 ounces
Oil of lemon .....	3 ounces
Oil of orange peel .....	2 ounces
Oil of lavender .....	3½ ounces
Oil of cloves .....	½ ounce
Oil of cinnamon .....	½ ounce
Oil of neroli .....	½ ounce

Mix, set aside 8 days and filter.

Water .....	1 gallon
Alcohol .....	4 gallons

**Florida Water.**

Oil of lavender .....	2 drams
Oil of bergamot .....	2 drams
Oil of lemon .....	2 drams
Oil of neroli .....	1 dram
Tincture of turmeric.....	1 dram
Oil of balm .....	30 drops
Otto of roses .....	10 drops
Rectified spirit .....	2 pints

Mix and filter.

**Florida Water.**

Oil of lavender .....	4 fl. ounces
Oil of bergamot .....	4 fl. ounces
Oil of neroli .....	2 fl. drams
Oil of orange .....	4 fl. drams
Oil of cloves .....	1 fi. dram
Pure musk .....	4 grains
Cologne spirit, 96 degrees.....	1 gallon
Tincture of tonka, sufficient to color.	

Macerate 15 days, and filter through paper.

**Florida Water.**

Essence lemon, 6 ounces; oil lavender, 8 ounces; oil lemongrass, 2 ounces; oil cloves, 4 ounces; alcohol, 4 gallons; distilled water, 1 gallon.

Mix, set aside 8 days, shaking occasionally and filter.

**Florida Water.**

Essence of bergamot .....	2 drams
Essence of lemon .....	1 dram
Oil of neroli .....	20 drops
Oil of origanum .....	6 drops
Oil of rosemary .....	20 drops
Orange flower water .....	1 ounce
Cologne spirit, enough to make .....	20 ounces

Dissolve the essential oils in the alcohol and add the orange flower water. Filter, if necessary.

**Florida Water, Cheap.**

Oil of lavender .....	1 ounce
Oil of bergamot .....	1 ounce
Oil of lemon .....	1 ounce
Oil of cloves .....	1 dram
Oil of cinnamon .....	1 dram
Alcohol, best rectified .....	2 quarts
Distilled water to make.....	6 quarts

Dissolve the oils in the alcohol and add the water. Let stand for 24 hours, and filter.

**Florida Water, Fine.**

Oil of lavender .....	2 drams
Oil of bergamot .....	2 drams
Oil of lemon .....	2 drams
Oil of neroli .....	1 dram
Tincture of turmeric.....	1 dram
Oil of balm .....	30 drops
Oil of rose .....	10 drops
Cologne spirit .....	1 quart

Mix. Dissolve the oils in the alcohol, set aside for 8 days and filter.

**Florida Water.**

Oil of bergamot .....	5 drams
Oil of lemon .....	3 drams
Oil of lavender .....	4 drams
Oil of orange .....	2 drams
Oil of cloves .....	½ dram
Oil of cinnamon .....	½ dram
Oil of neroli .....	½ dram
Rose water .....	1 quart
Cologne spirit .....	2 quarts

Mix all, let stand 8 days, shaking occasionally and filter.

**Geranium Water.**

Oil of rose geranium.....	1 ounce
Tincture of orris root.....	1 ounce
Tincture of musk.....	2 drams
Rose water.....	4 ounces

Mix the oil and tincture with the alcohol, add the rose water, set aside 8 days, filter.

**Honey Waters.**

Honey waters are but little called for at present. They were formerly supposed to preserve the hair. Any toilet water can be changed to a "honey water" by adding from 5 to 10 per cent clarified honey, shaking well and filtering.

**Hungary Water.**

Rosemary .....	3 ounces
Lavender .....	1 ounce
Diluted alcohol .....	6 ounces
Water .....	12 ounces

Mix, and distill 1 pint.

**Royal Hungary Water.**

Spirit of lavender .....	2 ounces
Spirit of sage .....	2 ounces
Spirit of rosemary .....	6 ounces

Mix.

**Honey Water.**

Oil of cloves .....	2½ drams
Oil of bergamot .....	10 drams
English oil of lavender..	2½ drams
Musk .....	4 grains
Yellow sandalwood .....	2½ ounces
Rectified spirit.....	32 ounces
Rose water .....	8 ounces
Orange flower water.....	8 ounces
English honey .....	2 ounces

Macerate the musk and sandalwood in the spirit 7 days, filter, dissolve the oils in the filtrate, add the other ingredients, shake well, and do so occasionally, keeping as long as possible before filtering.

**Hungary Water.**

Oil of peppermint .....	½ dram
Oil of lemon .....	1 ounce
Oil of melissa .....	1 ounce
Oil of rosemary .....	2 ounces
Tincture of orange flowers	16 ounces
Spirit of roses.....	16 ounces
Alcohol .....	1 gallon

Mix, let stand 8 days and filter.

**Lavender Water.**

Lavender waters take the same place in popularity in England that Florida Waters hold in America. They are prepared in England by distillation of the fresh flowers with alcohol, or diluted alcohol. They always contain other perfumes besides lavender and hundreds of formulas are recommended. On a small scale they are best made by dissolving oils in alcohol and water. After mixing, it is advisable to let them stand for some time, as their delicacy improves by age.

**Lavender Water.**

English oil of lavender...	2½ drams
Oil of bergamot.....	½ dram
Musk .....	10 grains
Alcohol .....	16 ounces

Mix, set aside for 8 days, shaking occasionally and filter.

**Lavender Water.**

English oil of lavender...	3 drams
Essence of ambergris (1 dram in 16 ounces).....	1 dram
Oil of bergamot.....	½ dram
Rose water.....	1 ounce
Alcohol .....	1 ounce
Orange flower water.....	1 ounce

Dissolve the essence and oils in the alcohol, add the water, shake, set aside for 8 days, filter.

**Lavender Water.**

English oil of lavender...	16 ounces
Oil of bergamot.....	4 ounces
Alcohol .....	4½ gallons
Distilled water.....	5 pints
Musk .....	30 grains
Sugar (powdered lump)...	1 ounce
Orange flower water.....	5 pints

Mix the oils and musk with the alcohol, add the water and sugar, let stand for 14 days, and filter.

**Lavender Water.**

Musk .....	40 grains
Oil of bergamot.....	1 ounce
English oil of lavender...	5 ounces
French essence of mille-	
fleurs .....	8 ounces
Powdered orris root.....	2 ounces
Otto of roses.....	20 minims
Essence of ambergris.....	2 ounces
Distilled water.....	40 ounces
Alcohol .....	6 pints

Dissolve the perfumes in the alcohol, add the water, macerate for 14 days, shaking occasionally and filter.

**Lavender Water.**

Ambergris .....	12 grains
Oil of bergamot.....	6 ounces
English oil of lavender..	1½ ounces
Oil of cloves.....	6 drams
English oil of santal.....	4 drams
Otto of rose.....	4 drams
Musk .....	4 drams
Alcohol .....	3 gallons

Mix, and filter after 8 days.

**Lavender Water.**

Oil of lavender.....	4½ ounces
Tonquin beans.....	7 ounces
Oil of bergamot.....	2 ounces
Otto of rose.....	160 minims
Musk .....	32 grains
Alcohol .....	3 gallons

Mix, and digest for 8 days, filter.

**Lavender Water.**

English oil of lavender...	2 ounces
Foreign oil of lavender	
(good) .....	1 ounce
Oil of bergamot.....	1 ounce
Essence of musk.....	6 drams
Essence of tonquin beans.	1 ounce
Alcohol .....	96 ounces

Mix and filter.

**Lavender Water.**

English oil of lavender...	3 ounces
Oil of bergamot .....	1½ ounces
Essence of tonquin beans.	1 ounce
Triple rose water.....	12 ounces
Alcohol .....	80 ounces

Dissolve the perfumes in the alcohol, add the rose water, set aside for 8 days, shaking occasionally and filter.

**Lavender Water.**

English oil of lavender...	10 drams
Oil of bergamot.....	1½ drams
Essence of musk.....	2 ounces
Oil of neroli .....	4 drops
Oil of geranium .....	4 drops
English oil of sandalwood	7 drops
Alcohol .....	30 ounces
Water .....	30 ounces

Mix, set aside for 8 days, and filter.

**Lavender Water.**

Oil of lavender .....	4 drams
Oil of bergamot .....	½ dram
Oil of lemon .....	½ dram
Musk .....	2 grains
Rose water.....	2 ounces
Alcohol .....	18 ounces

Add the perfumes to the alcohol, let stand 8 days, shaking occasionally, add the rose water, set aside again 8 days and filter.

**Lavender Water, Second.**

Oil of lavender (exot)...	2 ounces
Essence of musk .....	1 ounce
Essence of bergamot .....	1 ounce
Essence of ambergris .....	½ ounce
Oil of jasmine.....	2 drams
Rose water.....	10 ounces
Alcohol .....	3 pints

Mix the perfumes and the alcohol, add the rose water, set aside 8 days, filter.

**Lavender Water, White.**

Oil of lavender (flowers)..	3 drams
Oil of calamus .....	6 drops
Tincture of musk.....	4 drams
Cologne spirit .....	1 pint
Water .....	4 ounces
Fuller's earth, q. s.	

Filter.

**Lavender Water, English.**

Oil of bergamot .....	1 ounce
Oil of lavender .....	2 ounces
Oil of orange flower .....	2 drams
Spirit of ammonia.....	2 drams
Ambergris .....	15 grains
Musk .....	10 grains
Lavender flowers.....	3 ounces
Alcohol .....	5 pints
Rose water.....	3 pints

Distill.

**Lavender Water, French.**

Alcohol .....	8 gallons
Oil of lavender .....	16 ounces
Oil of bergamot .....	8 ounces
Oil of lemon .....	4 ounces
Oil of cloves .....	1 ounce
Oil of rose .....	1 ounce
Extract of musk .....	8 ounces
Extract of ambergris .....	2 ounces

Mix, after 2 weeks, filter.

**Lavender Water.**

Oil of lavender .....	½ ounce
Oil of cloves .....	½ drams
Oil of bergamot .....	1½ drams
Essence of ambergris.....	3 drams
Musk .....	5 grains
Tonka bean, contused.....	2 drams
Orris root, contused.....	2 drams
Rose water.....	10 ounces
Alcohol .....	40 ounces

Macerate 7 days only and filter.

**Lavender Water.**

Oil of lavender .....	12 drams
Oil of bergamot .....	4 drams
Tincture of ambergris.....	4 drams
Alcohol .....	40 ounces

Mix, filter in 2 weeks.

**Lavender Water.**

Oil of lavender .....	3 ounces
Oil of bergamot .....	10 drams
Oil of rose .....	12 minims
Oil of cloves .....	10 minims
Oil of neroli, superfine.....	40 minims
Essence of ambergris .....	½ ounce
Essence of musk .....	2 drams
Oil of lemon.....	½ dram
Spirit of nitrous ether.....	½ dram
Alcohol .....	120 ounces

Mix, filter after 2 weeks.

**Leipsic Water (Eau de Leipsic).**

Oil of bergamot .....	3 drams
Oil of lemon .....	1 dram
Oil of neroli .....	1 dram
Oil of sweet orange.....	25 drops
Oil of rosemary .....	20 drops
Orange flower water.....	6 ounces
Alcohol .....	24 ounces

Dissolve the oils in the alcohol, add the orange flower water, set aside 8 days, filter.

**Lilac Water.**

Extract of tuberose .....	1 pint
Extract of orange flower.....	¼ pint
Oil of bitter almond.....	3 drops
Extract of civet.....	½ ounce

This can be diluted with cologne spirit or a mixture of spirit and water to the desired strength. The peculiar odor of lilac flowers is due to a liquid principle called terpineol which also exists in many of the essential oils. It is obtainable in the market under the name of lilacine. This is used in the manufacture of some of the cheaper lilac odors upon the market, either alone or in connection with other ingredients, in alcohol of the required strength.

**Melissa Water.**

Melissa leaves.....	2 ounces
Lemon peel.....	1½ ounces
Nutmeg .....	6 drams
Cinnamon .....	3 drams
Cloves .....	3 drams
Alcohol .....	20 ounces
Water .....	30 ounces

Reduce the drugs to a coarse powder, mix all, and distil 25 ounces.

**Orange Flower Water.**

Take 3 or 4 drops of a fine quality of oil of neroli petals and drop on a small piece of filter paper, say three inches square. Put the paper into a quart bottle, pour on 4 fluid ounces of warm distilled water, about 100° F., and shake well for a couple of minutes. Then add warm distilled water up to a pint, and shake the whole from time to time until cold. Lastly, filter.

For flavoring purposes 2 drams of good distilled rose water to each pint of the above.

**Violet Water.**

Extract of violet (from pomade) .....	2 fl. ounces
Extract of cassie (from pomade) .....	6 fl. drams
Spirit of rose.....	6 fl. drams
Cologne spirit.....	1 pint

Mix and filter.

**Violet Water.**

Extract of violet (from pomade) .....	8 fl. drams
Extract of cassie (from pomade) .....	8 fl. drams
Spirit of rose.....	4 fl. drams
Tincture of Florentine orris .....	4 fl. drams
Cologne spirit.....	1 pint

Mix and filter.

**Violet Water.**

Any good extract of violet can be made into a violet water by mixing 1 part of extract with 4 parts of alcohol, adding a small quantity of powdered orris root, and filtering after 8 days.

**TOILET VINEGARS.****Toilet Vinegars.**

Formerly toilet vinegars were extensively used, not only for the sake of perfume, but because they were supposed to contain remarkable medicinal properties. A few drops on the handkerchief inhaled or applied to the forehead was claimed to be good to prevent fatigue and headache. Antiseptic properties were also attributed to them and they were therefore largely used in sick rooms. Originally they were distilled from the fresh plants, using diluted acetic acid as the menstruum, so that they contained no alcohol. At present they are generally made by mixing aromatic waters or extracts with vinegar or acetic acid.

**Aromatic Vinegar.**

Rosemary .....	1 ounce
Sage .....	1 ounce
Lavender .....	1½ ounces
Cloves .....	½ dram
Vinegar .....	2 pints

Infuse for 8 days and strain. As a lotion in contusions, sprains, etc.



**Vinegar Antiseptic.**

Acetic ether.....	2 drams
Concentrated acetic acid..	4 ounces
Tincture of eucalyptus...	2 ounces
Cologne water.....	26 ounces

Mix and filter.

**Aromatic Vinegar.**

Glacial acetic acid.....	1 pound
Alcohol, 90 per cent.....	2 fl. ounces
Camphor, pure, crushed	
small .....	2½ drams
Oil of cloves, finest.....	1½ drams
Oil of rosemary .....	1 dram
Oil of bergamot .....	½ dram
Oil of cinnamon .....	½ dram
Oil of lavender .....	½ dram
Oil of pimenta .....	½ dram
Oil of neroli, or ess. de	
petit grain .....	½ dram

Mix in a stoppered bottle and agitate until the whole of the camphor is dissolved. This is a powerful perfume and should only be used in a smelling bottle.

**Aromatic Toilet Vinegar.**

Extract of cassia .....	½ pint
Extract of violet .....	½ pint
Extract of rose .....	½ pint
Tincture of orris.....	½ pint
White wine vinegar.....	2 pints

Digest for 10 days and filter.

**Aromatic Vinegar.**

Glacial acetic acid.....	2 pounds
Camphor .....	4¼ ounces
Oil of lavender .....	¾ ounce
Oil of mace .....	150 grains
Oil of rosemary .....	150 grains

Mix and use for inhalation.

**Aromatic Vinegar.**

Oil of cloves .....	1 dram
Oil of lavender .....	40 minims
Oil of citronella .....	40 minims
Oil of bergamot .....	20 minims
Oil of origanum .....	20 minims
Oil of cinnamon .....	10 minims
Glacial acetic acid.....	1 ounce

Mix.

**Aromatic Vinegar.**

Tincture of benzoin .....	2½ drams
Tincture of tolu .....	2½ drams
Tincture of storax .....	2½ drams
Acetic acid .....	2 ounces
Rose water .....	4 ounces
Cologne water, to make...	2 pints

Mix, set aside for 8 days, shaking occasionally, filter through talcum.

**Aromatic Acetic Acid.**

Oil of lavender .....	4 drops
Oil of cloves .....	16 drops
Oil of cassia .....	8 drops
Camphor .....	12 grams
Acetic acid.....	120 grams

Mix and shake till the camphor is dissolved.

**Aromatic Vinegar.**

Oil of bergamot .....	1 dram
Oil of rose .....	½ dram
Oil of cloves .....	15 drops
Oil of neroli .....	8 drops
Oil of lavender .....	15 drops
Glacial acetic acid.....	5 ounces

Mix.

**Vinegar Benzoin.**

Powdered benzoin .....	10 ounces
Acetic acid .....	20 ounces
Alcohol .....	20 ounces

Digest for 8 days and filter.

**Camphorated Acetic Acid.**

Camphor .....	1 ounce
Alcohol .....	1 ounce
Acetic acid .....	9 ounces

Dissolve the camphor in the alcohol, add the acetic acid, shake and filter.

**Camphorated Vinegarett.**

Camphor .....	1 ounce
Alcohol .....	1 dram
Glacial acetic acid.....	10 ounces
Perfume .....	1 ounce

Rub the camphor with the alcohol to reduce it to a powder, and add the glacial acetic acid, then the perfume.

Set aside for 2 days, shaking occasionally and filter.

**Eucalyptus Toilet Vinegar.**

Tincture of eucalyptus...	2 ounces
Acetic ether.....	3 drams
Aromatic vinegar.....	30 ounces

Mix, shake well, filter through talcum.

**Floral Vinegar.**

Tincture of benzoin.....	2 grams
Resin storax.....	2 grams
Vanilla .....	2 grams
Oil of orange peel.....	2 grams
Oil of lemon .....	2 grams
Oil of rose .....	5 drops
Oil of neroli .....	10 drops
Oil of cinnamon .....	10 drops
Musk .....	0.1 gram
Alcohol .....	100 grams
Acetic acid.....	15 grams
Acetic ether.....	5 grams
*White wine vinegar...	250 grams

\*Diluted acetic acid would probably be supplied for this.

Mix, macerate for 8 days, shaking occasionally, filter.

**Preventive Vinegar.**

Benzoin .....	2¼ ounces
Lavender .....	¾ ounce
Cloves .....	150 grains
Marjoram .....	¾ ounce
Cinnamon .....	150 grains
Alcohol .....	1 quart
White wine vinegar.....	2 quarts

Macerate the solids with the alcohol and vinegar for 8 days, filter.

**Vinegar of Roses.**

Rub 15 grains cochineal and 2½ drams burnt alum together, and add a mixture of 5 drops otto of rose, 3 ounces rectified spirit, 1½ ounces acetic acid, 1 dram caramel, 32 ounces distilled water. Agitate, set aside for twenty-four hours, and filter.

**Spiced Vinegar.**

1. Macerate:  
Leaves of geranium, lavender, peppermint, rosemary, and sage, of each... 1 ounce  
In alcohol of 80 per cent.. 1 pound
2. Macerate:  
Angelica root, calamus root, camphor, mace, nutmeg, cloves, of each.... ½ pound  
In glacial acetic acid..... 2 pounds

For two weeks, mix the liquids, and filter them into a bottle, which should not be completely filled. The longer this mixture is allowed to season in the bottle, the finer will be the aroma, for in course of time the alcohol and acetic acid react on each other and form acetic ether, which likewise possesses a pleasant aromatic odor.

**Toilet Vinegar.**

Essence of bergamot .....	20 minims
Essence of ambergris .....	4 drams
Essence vanilla .....	30 minims
Oil of neroli .....	30 minims
Acetic acid (strong).....	160 minims
Alcohol .....	6 ounces

Mix and filter.

**Toilet Vinegar.**

Balsam Peru .....	5 parts
Tincture of benzoin.....	25 parts
Hoffman's life balsam.....	250 parts
Alcohol dilute.....	250 parts
Rose water .....	150 parts
Acetic acid dilute.....	50 parts

Mix and filter through talcum. A few drops to be used in the wash water or about 5 teaspoonfuls for the bath.

**Toilet Vinegar Hygienic.**

Acetic ether.....	2 drams
Glacial acetic acid.....	30 drams
Tincture of eucalyptus....	14 drams
"Eau de cologne".....	30 ounces

Mix and filter.

**Vinaigre Aux Fleurs D'Oranges.**

Extract of orange flower..	7 ounces
White wine vinegar.....	1 quart

This is usually left colorless.

Mix and filter after 8 days.

**Vinaigre de Mallard.**

Tincture of benzoin .....	2 drams
Tincture of balsam tolu...	2 drams
Cologne .....	10 ounces
Mixture oleo-balsamic.....	2 ounces
Dilute acetic acid.....	4 ounces
Rhatany .....	1 dram

Mix, macerate for 8 days and filter.

**Vinaigre des Quatre Voleurs.**

Leaves of lavender .....	3¼ ounces
Leaves of peppermint .....	3¼ ounces
Leaves of rue .....	3¼ ounces
Leaves of rosemary .....	3¼ ounces
Leaves of cinnamon .....	3¼ ounces
Calamus .....	150 grains
Mace .....	150 grains
Nutmeg .....	150 grains
Camphor .....	¾ ounce
Macerated in alcohol.....	7 ounces
Acetic acid .....	4¾ pounds

After 8 days express and pass enough acetic acid through the marc to obtain 5 pints.

**Vinaigre a la Rose.**

Essence of rose (triple)..	10½ ounces
White wine vinegar.....	1 quart

This should be colored a pale rose tint to suit.

**Vinaigre Aux Violettes.**

Extract of cassie .....	8 ounces
Extract of orange flower..	3½ ounces
Tincture of orris root.....	5½ ounces
Essence of rose (triple)..	5½ ounces
White wine vinegar.....	1 quart

Mix, set aside 8 days and filter.

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**TOILET POWDERS.**

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**Toilet Powders.**

Toilet powders are used to preserve, heal and beautify the skin, and if used judiciously, are of decided benefit. According to the part of the body to which they are so be applied, they are called face powders,

skin powders, baby powders, etc., but they differ but little except in perfume, which is generally strongest and most delicate in face powders. The name of "rice powder" is also employed, although rice is but seldom used, the starches of wheat, maize and potato being more suitable. Zinc oxide and various bismuth salts are added to the starches, while French chalk or talcum forms the bulk of many of them. Toilet powders containing mercury should not be used.

**Toilet Powder Bases.**

The following are the most common bases of all toilet powders to which perfume and coloring matter are to be added. Other combinations of the ingredients can be made if desired.

**Toilet Powder Base.**

Orris root.....	1 part
Zinc oxide.....	2 parts
French chalk.....	2 parts

**Toilet Powder Base.**

Precipitated chalk.....	2 parts
French chalk.....	3 parts

**Toilet Powder Base.**

Bismuth oxychloride.....	1 part
Precipitated chalk.....	3 parts
French chalk.....	5 parts

**Toilet Powder Base.**

Bismuth subcarbonate....	1 part
Zinc oxide.....	3 parts
French chalk.....	4 parts
Precipitated chalk.....	4 parts
Cornflour .....	5 parts

**Toilet Powder Base.**

Bismuth subnitrate.....	1 part
French chalk.....	25 parts
Cornflour .....	35 parts
Kaolin .....	40 parts

**Toilet Powder Base.**

Bismuth subcarbonate....	1 part
Zinc oxide.....	3 parts
Magnesium carbonate....	3 parts
French chalk.....	5 parts

**Toilet Powder Base.**

Zinc oxide.....	1 part
French chalk.....	3 parts

**Toilet Powder Base.**

French chalk.....	4 parts
Zinc oxide.....	1 part
Starch .....	1 part

**Color for Toilet Powders.**

Pink and brunette are the two colors for toilet powders. For the pink, carmine is used, for the brunette, levigated burnt umber or burnt sienna are the best. The colors should be in very fine powder and must be mixed with a small quantity of the toilet powder and sifted, then more is added gradually. In the same way the perfume must be treated. When all is incorporated in the powder it must be passed through a very fine sieve several times to obtain the highest degree of fineness.

**Baby Powder.**

Lycopodium .....	10 ounces
Potato starch,	
Venetian talc, of each....	5 ounces
Zinc oxide.....	3 drams
Salicylic acid.....	25 grains

Mix well and sift.

**Baby Powder.**

Any of the preceding toilet powder bases may be used as a reliable baby powder. As a perfume a faint odor of violet is preferable.

**Baby Powder.**

Powdered French chalk... 14 ounces  
Powdered boracic acid.... 2 ounces  
Extract of jasmine ..... 1½ drams  
Extract of musk ..... ½ dram

Pass through fine sieve.

**O. K. Baby Powder.**

Oxide zinc..... ½ ounce  
Powdered starch ..... 1½ ounces  
Boric acid..... 20 grains  
Oil of eucalyptus..... 10 drops

Mix and rub very fine in a mortar, then sift several times.

Dust on parts affected, as occasion may require.

**Beauty Powder.**

Wheat starch, finest..... 10 ounces  
Ultramarine blue..... 20 grains  
Attar of roses..... 10 drops  
Oil of orange flower..... 10 drops

Mix and sift.

**Blanc de Perle Powder.**

Talc ..... 1 ounce  
Bismuth subcarbonate.... 2 drams  
Barium sulphate, precipitated ..... ½ ounce  
Perfume, q. s.

Mix and sift.

**Complexion Powder.**

Carmine ..... 15 grains  
Ammonia water (stronger). ½ dram  
Alcohol ..... 20 drops  
Powdered talc ..... 7 ounces  
Powdered orris root..... 2 ounces  
Zinc oxide ..... 1 ounce  
Acid salicylic ..... 1 dram

Dissolve the carmine in the ammonia; add the alcohol, then the powders; to be thoroughly mixed and the powder exposed to permit evaporation of alcohol and ammonia.

**Cosmetic Powder, White (Weisser Haarpuder).**

Orris root ..... 1 ounce  
Talc ..... 1 ounce  
Starch, wheat..... 2½ ounces

Reduce to a fine powder and mix. Then add

Tincture of musk..... 4 drops  
Oil of lemon,  
Oil of bergamot, of each.. 6 drops  
Oil of orange flower..... 3 drops

Mix and sift.

**Cosmetic Powder, Rose.**

Carmine red..... 4 grains  
Sodium carbonate effloresced ..... 1 dram  
Spirit of ammonia..... ½ dram

Mix, then dry and add:

Rice flour ..... 2 ounces  
Orris root ..... 1 ounce  
Oil of rose..... 5 drops

Mix and sift.

**Cuban Belle Powder.**

White rose face powder,  
Red rose face powder, of  
each ..... 4 ounces  
Oxford ochre..... 4 drams

Mix intimately and pass through fine bolting cloth.

**Children's Dusting Powder.**

Burnt alum..... 2 drams  
Boric acid..... 2 drams  
Precipitated chalk..... 3 ounces  
Starch ..... 5 ounces  
Carbolic acid..... ½ dram  
Oil of lemon a sufficiency to perfume.

Mix well.

**Children's Dusting Powder.**

French chalk..... 10 ounces  
Precipitated chalk..... 1 ounce  
Orris root ..... 1 ounce  
Boric acid ..... ½ ounce  
Extract violet ..... 2 drams

Mix and sift.

**Children's Dusting Powder.**

French chalk..... 10 ounces  
Zinc oxide..... 1 ounce  
Boric acid..... ½ ounce  
Oil of eucalyptus..... 15 drops  
Oil of lemon ..... 20 drops  
Oil of neroli ..... 5 drops

Mix and sift.

**Diaphane Powder (Bernhardt's Favorite).**

Whitest venetian talc... 2 parts  
Rice flour..... 2 parts  
Zinc white..... 1 part

Mix and perfume with a sufficiency of the following:

Oil of bergamot ..... 45 minims  
Oil of ylang ylang..... 30 minims  
Oil of neroli ..... 30 minims  
Eau de cologne..... 5 drams

The rose-tinted powder is colored with ammoniacal solution of carmine and perfumed with a mixture of

Oil of bergamot ..... 45 minims  
Otto of rose..... 30 minims  
Oil of cinnamon..... 8 minims  
Essence of musk..... 8 minims  
Extract of white rose.... 5 drams

The yellow-tinted powder is colored with cadmium yellow, or better, with yellow ochre and a trace of carmine, the perfume being this mixture, viz.:

Oil of bergamot ..... 45 minims  
Oil of cloves ..... 15 minims  
Oil of cedar-wood ..... 15 minims  
Oil of patchouli ..... 15 minims  
Essence of new-mown hay 5 drams

**Dusting Powder, McCall Anderson's.**

Camphor ..... 3 drams  
Zinc oxide ..... 4 drams  
Starch ..... 16 drams

The powder, after being well triturated, should be bolted.

**Antiseptic Dusting Powder for Tourists.**

Violet powder..... 8 ounces  
Boric acid..... 4 ounces  
Salicylic acid..... 1 ounce  
Eucalyptus oil to perfume.

Mix and pass through a fine sieve.

**Dusting Powder.**

Simple lead plaster..... 1 ounce  
Boric acid..... ½ ounce  
Starch in powder..... 10 ounces

Rub the plaster into a fine powder with the other ingredients and sift.

**Dusting Powder, Conway's Special.**

Zinc oxide..... 1 ounce  
Acid tannic..... 1 ounce  
Lycopodium ..... 6 ounces

Mix and sift.



**Dusting Powder.**

Zinc oxide.....	2 ounces
Tannic acid.....	2 ounces
Boric acid.....	1 ounce
Lycopodium .....	16 ounces

Mix well and sift.

**Lanolin Dusting Powder.**

Lanolin, anhydrous.....	5 grams
Ether .....	20 grams

Dissolve and rub up with

Wheat starch.....	45 grams
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Allow the ether to evaporate, then add:

Boric acid.....	2 grams
Talcum .....	50 grams
Oil of wintergreen.....	1 drop
Oleo-balsamic mixture....	1 drop

Mix and sift.

**Truss Dusting Powder.**

Powdered starch .....	4 ounces
Powdered talc .....	2 ounces
Dried alum.....	2 drams
Powdered boric acid.....	2 drams
Carbolic acid.....	$\frac{1}{2}$ dram
Oil of lemon .....	$\frac{1}{2}$ dram

Mix and sift.

**Enamel Powder.**

Talc or French chalk (finely scraped).....	1 part
Pearl white.....	1 part
Rouge or carmine (to slightly tinge it), quantity sufficient.	

Mix. Used to conceal decolorations, and, without coloring, to whiten the skin.

**Face Powder.**

Talcum .....	1 ounce
Magnesium carbonate.....	1 ounce
Zinc carbonate.....	1 ounce
Otto of roses.....	5 drops

Mix and sift.

**Face Powder.**

Talc .....	1 pound
Extract of jasmine .....	$\frac{3}{4}$ ounce
Extract of musk .....	$\frac{1}{4}$ ounce
Oil of rose.....	8 drops

Mix and pass through a No. 100 sieve.

**Face Powder.**

Corn starch.....	7 ounces
Rice flour.....	1 ounce
Talcum .....	1 ounce
Orris root.....	1 ounce
Extract of cassie.....	$1\frac{1}{2}$ drams
Extract of jasmine.....	$\frac{1}{2}$ dram

Mix and sift.

**Face Powder.**

Very fine powdered chalk.	1 ounce
Bismuth subnitrate .....	1 ounce
Oil of roses.....	2 drops

Dust over the surface. This powder is especially adapted for a greasy, shiny, rough or red condition of the skin.

**Face Powder.**

Powdered zinc oleate.....	$\frac{1}{2}$ ounce
Powdered arrowroot .....	1 ounce
Oil of bergamot or of rose	3 drops

Dust over the skin.

**Face Powder.**

Magnesium carbonate.....	$\frac{1}{2}$ pound
Talcum .....	1 pound
Oil of rose .....	8 drops
Oil of neroli .....	20 drops
Extract of musk.....	10 drops

Mix and sift.

**Face Powder.**

Lanolin, anhydrous.....	1 dram
Starch .....	1 ounce
French chalk.....	$2\frac{1}{2}$ ounces
Cumarin .....	3 grains
Otto of rose.....	2 minims

Rub the lanolin with 2 drams of ether, add the chalk and mix well, allow the ether to evaporate, add the other ingredients, mix and sift.

**Face Powder.**

Zinc oxide.....	1 ounce
Precipitated chalk.....	6 ounces
Talcum .....	1 ounce
Corn starch.....	1 ounce
Extract of white rose.....	$\frac{1}{2}$ dram
Extract of orange blossoms	$1\frac{1}{2}$ drams
Extract of cassie .....	$\frac{1}{2}$ dram

Mix and sift.

**Face Powder, French White.**

Talc .....	4 pounds
Oil of lemon .....	75 grains
Oil of bergamot .....	75 grains

The talc must be reduced to finest powder, levigated, dried, then perfumed.

Mix and sift.

**Face Powder, Dry Pearl White.**

Venetian chalk.....	20 ounces
Bismuth subnitrate.....	3 ounces
Zinc white.....	3 ounces
Oil of lemon.....	1 dram

Mix and sift.

**Face Powder, Poudre Blanche Surfine.**

Starch powder.....	20 ounces
Bismuth subnitrate.....	2 ounces
Oil of lemon .....	20 drops
Oil of rose .....	10 drops

Mix and sift.

**Fairies' Face Powder.**

Talc .....	10 drams
Wheat starch.....	1 dram
Orris root.....	1 dram
Oil of bergamot.....	1 drop

Mix and sift.

**Fleur de Lys Face Powder.**

Bismuth subnitrate.....	$\frac{1}{2}$ dram
Purified talcum.....	$1\frac{1}{2}$ ounces
Wheat starch.....	2 ounces
Gypsum .....	3 ounces
Triple extract fleur de lys	1 fl. dram

Mix intimately and pass through fine bolting cloth.

**Harmless Face Powder, White.**

Oxide zinc.....	1 ounce
Wheat starch.....	8 ounces
Oil of rose.....	3 to 6 drops

Mix and sift.

**Imperial Face Powder, White.**

Talc (of the finest white grade) .....	10 ounces
English precipitated chalk	6 ounces
Powdered magnesium car- bonate .....	$2\frac{1}{2}$ ounces
Bismuth oxychloride.....	2 ounces
Corn starch.....	5 ounces
Salicylic acid (true).....	10 grains
Oil of rose (pure).....	10 drops
Heliotropin .....	10 grains
Oil of bitter almond.....	2 drops

Triturate the oils, heliotropin, salicylic acid with bismuth thoroughly, mix with balance and sift through bolting cloth.

**Harmless Face Powder, Red.**

Face powder (preceding formula .....	16 ounces
Carmine .....	15 grains
Ammonia water.....	½ dram
Alcohol .....	1 dram

Rub the carmine with the ammonia and the alcohol, add a little of the powder, mix well and allow to dry, then add the remainder of the powder, mix and pass through a fine sieve.

**Imperial Face Powder, Pink or Flesh.**

Take of the above (Imperial Face Powder)....	1 pound
Carmine, No. 40.....	18 grains

Triturate carmine with a small amount of the powder, gradually adding the balance, and sift thoroughly through bolting cloth.

**Imperial Face Powder, Blonde.**

White Imperial Face Powder .....	1 pound
Carmine, No. 40.....	3 grains
Burnt umber (in fine powder) .....	1 dram
Raw sienna.....	1 dram

Proceed as with preceding.

**"Invisible" Face Powder.**

Zinc oxide.....	1 pound
Precipitated chalk.....	6 pounds
Powdered talc.....	1 pound
Corn starch.....	2 pounds
Extract of white rose.....	1 ounce
Extract of jasmine .....	1 ounce
Extract of orange flower..	1 ounce
Extract of cassie .....	1 ounce
Extract of musk .....	¼ ounce

If this powder be too light, a portion of the precipitated chalk may be replaced with prepared chalk.

**"Invisible" Face Powder.**

Magnesium carbonate.....	1 pound
Talc .....	2 pounds

Perfume and color, if desired.

**"Invisible" Face Powder.**

Magnesium carbonate.....	½ pound
Powdered talc.....	1 pound
Oil of rose .....	8 drops
Oil of neroli .....	20 drops
Extract of jasmine .....	½ ounce
Extract of musk .....	1 dram

Mix intimately and sift.

**Nile Lily Face Powder.**

Bismuth subcarbonate....	2 drams
Zinc oxide (Hubbuck's)...	2 ounces
Purified talcum.....	2½ ounces
Precipitated chalk.....	2½ ounces
Wheat starch.....	3½ ounces
Oil of rose geranium.....	20 drops

Mix intimately and pass through a fine bolting cloth.

**Rose Face Powder.**

Corn starch .....	9 ounces
Talcum .....	1 ounce
Oil of rose.....	5 drops
Extract of musk .....	8 drops
Extract of jasmine .....	24 drops

Mix and pass through a fine sieve.

**Rose Face Powder.**

Rice starch.....	8 ounces
Carmine .....	10 grains
Otto of rose.....	8 drops
Oil of santal.....	8 drops

Mix well and sift.

**White Cake Face Powder.**

Zinc oxide.....	4 ounces
Wheat flour.....	4 ounces
French chalk.....	4 ounces
Plaster of paris.....	1 ounce

Perfume as desired.

Rub well together and mix with sufficient water to suitable consistence so that it can be poured out into boxes or paper molds.

**Cake Face Powders.**

Face powders are sometimes desired in cake form. They can be made by taking any powder of the formulas given and adding about 5 per cent of plaster of paris as directed in the above formula.

**White Rose Face Powder.**

Zinc oxide (Hubbuck's)...	7 ounces
Powdered talcum (N. F.) ..	9 ounces
Magnesium carbonate.....	1 ounce
Triple extract of jasmine.	25 drops
Triple extract of white rose	10 drops

Mix intimately and pass through fine bolting cloth.

**Infant Powder.**

Zinc oxide, commercial,	
Orris root, of each.....	1 ounce
Talc .....	5 ounces

Perfume as desired, mix and sift.

**Pilot's Infant Powder.**

Carbolic acid.....	50 drops
Boracic acid.....	1½ ounces
Powdered French chalk.....	14½ ounces

Triturate the French chalk with the carbolic acid gradually added; then add the boracic acid and thoroughly mix them.

**Kaloderm.**

Wheat flour.....	4 pounds
Almond bran.....	1 pound
Orris root, fine powder....	1 pound
Extract of rose.....	1 pint
Glycerin .....	6 fl. ounces

Form into a dough, which is thinned with water and painted on the skin.

**Antichafe Nursery Powder.**

Powdered fuller's earth....	9 ounces
Powdered boric acid.....	1½ ounces
Powdered zinc oxide.....	3 ounces
Powdered starch .....	9 ounces
Powdered orris root.....	1½ ounces
Oil of bergamot.....	2 drams

Mix the powders thoroughly, add the oil and pass through a fine sieve.

**Nursery Powder (to Cure Chafing).**

Gum camphor.....	¼ ounce
Carbolic acid.....	15 drops
Zinc oxide.....	¾ ounce
English precipitated chalk	2 ounces
Oil of neroli .....	5 drops
Oil of rose .....	2 drops

Rub the camphor to a fine powder in a mortar; use alcohol to reduce it, and mix the other components thoroughly. Sift through a bolting cloth of 100 meshes to the inch.

This powder is recommended for healing raw and irritated surfaces and for curing sunburn. Mixed in the proportion of 3 parts of vaseline or cold cream it forms one of the most useful domestic remedies in the way of a general healing salve that can be suggested.

**Barber's Dusting Powder.**

Salol .....	1 dram
Starch .....	2 ounces

Mix intimately.

**Nursery Powder (Catine).**

Talcum ..... 8 ounces  
 Fuller's earth..... 4 ounces  
 Lycopodium ..... 4 ounces  
 Oil of rose..... 5 drops  
 Rub well together and pass through a fine sieve.

**Perspiration Powder.**

Starch ..... 8 ounces  
 Carbolic acid.....  $\frac{1}{2}$  dram  
 Burnt alum..... 2 drams  
 French chalk..... 1 ounce  
 Oil of lemon..... 1 dram

Mix and sift.

**Perspiration Powder.**

Talcum ..... 8 ounces  
 Starch ..... 2 ounces  
 Oil of eucalyptus.....  $\frac{1}{2}$  dram  
 Thymol ..... 10 grains  
 Salicylic acid..... 1 dram  
 Mix the oil, acid and thymol intimately, add a little talcum, mix, then the remainder and the starch, mix well and sift.

**Shaving Powder.**

Powdered soap..... 1 pound  
 Sodium carbonate (dried). 2 ounces  
 Wheat starch..... 3 ounces  
 Orris root ..... 1 ounce  
 Oil of bergamot..... 1 dram

Mix well.

**Skin Gloss.**

Potassium carbonate.....  $1\frac{3}{4}$  ounces  
 Powdered spermaceti.....  $1\frac{3}{4}$  ounces  
 Starch powder..... 1 pound  
 Benzoin .....  $\frac{3}{4}$  ounce  
 Oil of bitter almond..... 150 grains  
 Preserve in well-closed boxes. For use, stir some into water.

**Skin Powder.**

Starch or farina, in fine powder ..... 1 pound  
 Orris root, in fine powder  $\frac{1}{2}$  to  $\frac{3}{4}$  oz.  
 Essence of ambergris..... 10 drops  
 Oil of bergamot ..... 10 drops  
 Oil of rhodium ..... 2 drops  
 Mix thoroughly, and rub the whole through a fine gauze sieve; very fine. It should be put up in packets of thin non-porous pasteboard, and packed moderately close to prevent loss of odor.

**Tea Rose Talc.**

Powdered talc..... 5 pounds  
 Oil of rose ..... 50 drops  
 Oil of wintergreen ..... 4 drops  
 Extract of jasmine..... 2 ounces  
 Mix well and pass through a fine sieve.

**Toilet Talc.**

Powdered talc ..... 1 ounce  
 Powdered orris root..... 8 ounces  
 Zinc oxide ..... 8 ounces  
 Precipitated chalk..... 6 ounces  
 Oil of rose ..... 4 drops  
 Extract of jasmine.....  $\frac{1}{4}$  ounce  
 Mix and sift.

**Pistachio Toilet Powder.**

Pistachio meal (in finest powder, and deprived of oil) ..... 10 ounces  
 Talcum ..... 10 ounces  
 Oil of lavender ..... 20 drops  
 Oil of rose ..... 15 drops  
 Oil of cinnamon ..... 5 drops  
 Mix and sift.

**Tannated Talc.**

Powdered talc..... 5 pounds  
 Tannic acid ..... 4 ounces  
 This is indicated in excoriating and suppurating surfaces.

**Rose Toilet Powder.**

Starch powder..... 10 ounces  
 Carmine ..... 10 grains  
 Oil of rose ..... 8 drops  
 Oil of santal ..... 8 drops  
 Rub the carmine with a little ammonia water and alcohol, add the starch gradually and also incorporate the perfumes. Mix well and pass through a fine sieve.

**Toilet Powder (Violet).**

Powdered starch ..... 1 pound  
 Powdered orris root..... 3 ounces  
 Oil of lemon ..... 20 drops  
 Oil of lavender ..... 10 drops  
 Oil of cloves ..... 5 drops  
 Triturate well together, and sift through a fine sieve.

**Toilet Powder, White.**

Fine levigated zinc, white  $1\frac{3}{4}$  ounces  
 Venetian talcum.....  $1\frac{3}{4}$  ounces  
 Magnesium carbonate.....  $1\frac{3}{4}$  ounces  
 Oil of rose ..... 20 drops  
 Oil of orris ..... 20 drops

Mix and sift.

**Pate d'Amandes en Poudre Parfumees (Pariser Mandelkleie).**

Blanched sweet almonds, powdered ..... 1 ounce  
 Orris root, powdered..... 3 ounces  
 Talc ..... 5 ounces  
 Sodium carbonate, dried. 2 drams  
 Borax ..... 2 drams  
 Oil of bergamot ..... 12 drops  
 Oil of lemon peel ..... 4 drops  
 Oil of orange flower ..... 3 drops  
 Tincture of musk..... 2 drops  
 Mix intimately.

**Poudre Aux Fleurs d'Italie.**

Powder of musk roses.... 1 ounce  
 Powder of white roses.... 1 ounce  
 Jasmine powder.....  $\frac{1}{2}$  ounce  
 Powder of orange flower...  $\frac{1}{2}$  ounce  
 Powder of tuberose .....  $\frac{1}{2}$  ounce  
 Powder of jonquille .....  $\frac{1}{2}$  ounce  
 Orris powder.....  $\frac{1}{2}$  ounce  
 Clove powder.....  $1\frac{1}{2}$  drams  
 Ambergris .....  $\frac{1}{2}$  dram  
 Musk .....  $\frac{1}{2}$  dram  
 Finest rice flour..... 10 ounces  
 Mix thoroughly and sift through a fine sieve.

**Poudre Cosmetique.**

Talc ..... 6 ounces  
 Bismuth subchloride ..... 1 ounce  
 Carmine red..... 5 grains  
 Oil of bergamot ..... 10 drops  
 Oil of orange flower..... 2 drops

Mix and sift.

**Poudre de Riz (Violet).**

Corn starch..... 7 ounces  
 Rice flour..... 1 ounce  
 Powdered talc ..... 1 ounce  
 Powdered orris ..... 1 ounce  
 Extract of cassie .....  $1\frac{1}{2}$  drams  
 Extract of jasmine .....  $\frac{1}{2}$  ounce  
 Mix thoroughly and pass through a 100-mesh bolting cloth.



**Poudre de Riz, Rose.**

Corn starch..... 9 ounces  
 Powdered talc..... 1 ounce  
 Oil of rose..... 5 drops  
 Extract of musk ..... 10 drops  
 Extract of jasmine ..... 20 drops  
 Mix and sift.

**Poudre de Riz, Rose (Cheaper).**

Potato starch..... 9 ounces  
 Powdered talc..... 1 ounce  
 Oil of rose..... 3 drops  
 Extract of jasmine..... 10 drops  
 Mix and sift.

**Rouge en Pate.**

Carmine ..... 1 ounce  
 Talcum ..... 21 ounces  
 Gum acacia.....1½ ounces

The ingredients in finest powder are mixed in a mortar by prolonged trituration, then water is added in small portions to form a doughy mass, to be filled into shallow porcelain dishes about the diameter of a dollar. If the rouge is desired darker for the use of actors and dark-complexioned persons, the proportion of carmine should be increased.

**Rouge Végétal.**

Talcum, pulverized..... 10 ounces  
 Carthamus ..... 1 ounce  
 Absolute alcohol.....2½ ounces

Macerate the carthamus in the alcohol for 8 days, express, allow the alcohol to evaporate, mix with the talcum, dry, and sift.

**Rouge Végétal.**

Talcum, pulverized..... 10 ounces  
 Mix with  
 Carmine ..... ¼ ounce  
 Dissolve in  
 Ammonia water..... ½ ounce

After thorough admixture, evaporate off the ammonia and form a dry powder.

**Bath Powder.**

Powdered borax..... 4 ounces  
 Salicylic acid..... 1 dram  
 Extract of cassie ..... 1 dram  
 Extract of jasmine ..... 1 dram  
 Oil of lavender..... 20 minims

Rub the oil and extracts with the borax until the alcohol has evaporated, and put into a wooden box. Use a heaping teaspoonful to the body bath, or about ½ teaspoonful for a face bath.

**Bath Powder, Perfumed.**

Powdered borax..... 8 ounces  
 Powdered white castile soap ..... 8 ounces  
 Essence of bergamot ..... 6 fl. drams  
 Essence of lemon ..... 3 fl. drams  
 Oil of neroli ..... 3 fl. drams  
 Oil of petit grain..... 8 minims  
 Oil of organum ..... 30 minims  
 Oil of rosemary ..... 30 minims  
 Otto of rose..... 5 minims

Mix the powders, add the essential oils, and rub together in a mortar. A tablespoonful of this added to the bath water gives the odor of cologne.

**Cosmetic Wash Powder.**

Pulverized castile soap... 10 ounces  
 Dry sodium carbonate... 3 drams  
 Orris root..... 3 ounces  
 Bran of almonds..... 5 ounces  
 Oil of bergamot ..... 15 drops  
 Oil of lemon ..... 5 drops  
 Oil of cloves ..... 2 drops

A small quantity of this powder added to water gives it a lather of an agreeable odor, which cleanses and softens the skin.

**Pasta Mack.**

Twenty-seven parts rice starch, 73 parts effervescing powder (bicarb. sodium 10. tartaric acid 9), perfumed and made into tablets. Used by dissolving in water, thus producing carbonic anhydride, which is very refreshing to the skin.

**Held's Washing Powder for the Hands.**

Mix immediately  
 Fine wheat flour..... 10 ounces  
 Ordinary pulverized soap.....2½ ounces  
 Pulverized orris root..... 1 ounce  
 Oil of bergamot..... ½ dram  
 Keep this mixture in a well-closed jar.

In using take one or two spoonfuls of the powder, mix it to a thin paste with water and rub the hands with this for some time. Then wash them in clean water and dry them thoroughly.

**LIQUID ENAMELS.**

Liquid enamels or liquid face powders are prepared with perfumed water to which a little glycerin is added, and applied to the skin by means of a soft sponge. They are preferred by some to the dry powder. Almost any face powder free of starch can be changed into the so-called "liquid" form by putting it in the desired aromatic water. Liquid enamels are also known under the name of blanc de perles. They may be tinted the same as the dry powders.

**Blanc de Perle.**

Bismuth oxide..... 1 ounce  
 Glycerin ..... 2 drams  
 Rose water..... 7 ounces  
 Bay rum..... ½ ounce

Mix. Shake before using.

**Bloom of Roses.**

Ammonia water..... ½ ounce  
 Carmine ..... ¼ ounce  
 Rose water..... 1 pint  
 Essence of rose..... ½ ounce  
 Glycerin ..... 1 ounce

Rub the carmine with the ammonia, add the glycerin and the other ingredients. Mix well.

**Liquid Enamel.**

Precipitated chalk..... 2 drams  
 Bismuth oxychloride.....1½ drams  
 Glycerin ..... ¾ fl. ounce  
 Fluidextract of orris..... ¾ fl. ounce  
 Tincture of vanilla..... 20 minims  
 Spirit of cumarin..... 10 minims  
 Water ..... 2¼ fl. ounces

Rub the powders in a mortar with the glycerin to effect perfectly fine division, add the other ingredients and mix. Shake before using.

**Liquid Enamel.**

Zinc oxide..... 3 drams  
 Precipitated chalk..... 2 drams  
 Spirit of bergamot..... 10 minims  
 Alcohol ..... 3 fl. drams  
 Water ..... 2 fl. ounces  
 Carmine solution, q. s.

Similar to Laird's Bloom of Youth.

Prepare as directed in preceding formula.

**Liquid Enamel.**

Zinc oxide..... 2 ounces  
 Glycerin ..... 6 drams  
 Water ..... 10 ounces  
 Spirit of rose ..... 10 drops  
 Spirit of rose geranium... 15 drops

Prepare as directed above.

**Liquid Enamel.**

Bismuth oxychloride.....	6 drams
Glycerin .....	½ fl. ounce
Alcohol .....	½ fl. ounce
Essence of cassie .....	15 minims
Essence of violets .....	5 minims
Essence of tuberose .....	15 minims
Water .....	2 fl. ounces

Prepare as above.

**Liquid Enamel.**

Zinc oxide.....	2 ounces
Glycerin .....	1½ fl. ounces
Water .....	½ fl. ounces
Tincture of balsam of Peru .....	2 minims
Tincture of styrax.....	2 minims

Prepare as above.

**Liquid Enamel.**

Zinc oxide.....	5 drams
Glycerin .....	½ fl. ounce
Alcohol .....	3 fl. drams
Spirit of lavender .....	¾ fl. dram
Spirit of bergamot .....	¼ fl. dram
Pumice stone, powdered..	2 drams
Water .....	2 fl. ounces
Ammoniacal carmine solution, q. s.	

After mixing the spirit of lavender and bergamot with the alcohol, add the pumice stone and then the water, filter until a clear filtrate is obtained, passing enough 15 per cent alcohol through the paper to make the filtrate measure 2½ fluid ounces. This may be added to the zinc oxide which should previously have been ground to a smooth paste with the glycerin. Lastly give it a very light pink tint with carmine solution.

**Liquid Enamel.**

Zinc oxide.....	3 drams
Bismuth subcarbonate....	3 drams
Essence of white rose....	1 dram
Glycerin .....	½ ounce
Water .....	6 ounces

Mix.

**Liquid Paint, Lait d' Iris.**

Bismuth (white).....	1 ounce
Water .....	12 ounces

Mix. The water is perfumed with essential oil of orris.

**Liquid Paint, Eau de Lys.**

Zinc white.....	2 drams
French chalk.....	2 drams
Glycerin .....	4 drams
Rose water.....	15 ounces

Mix.

**Liquid Paint.**

Eosin .....	4 grains
Distilled water.....	80 grains
Glycerin .....	20 grains
Eau de cologne.....	5 drams
Spirit (free from fusel oil) .....	1 ounce

Dissolve. Allow to stand and filter. According to desire, the proportion of eosin may be increased or diminished, or modified with aniline-orange.

**Liquid Pearl Face Wash.**

Flake white.....	6 drams
Carmine, No. 40.....	½ dram
Glycerin .....	2 drams
Rose water.....	7½ ounces

Mix in a mortar. Shake before using, and apply with a sponge.

**Liquid Pearl Face Wash.**

Zinc oxide.....	½ ounce
Glycerin .....	2 ounces
Rose water.....	2 ounces

Mix.

**Liquid Paint.**

Finest carmine.....	1 ounce
Lead white.....	1½ ounces
French chalk.....	3 ounces
Tincture of benzoin (simple) .....	¼ ounce
Eau de cologne.....	2 ounces
Rose water.....	1½ pints

Mix.

**Liquid Pearl Face Wash.**

English precipitated chalk	3 ounces
Powdered chalk.....	1 dram
Bay rum .....	1 ounce
Glycerin .....	½ ounce
Extract of violet.....	1 dram
Distilled water.....	1 pint

Rub the chalk and glycerin to a smooth paste, then add the rest.

**White Rose Face Wash.**

Bismuth oxychloride.....	2 ounces
French chalk.....	1 ounce
Prepared chalk.....	¼ ounce
Glycerin .....	¼ ounce
Water .....	5 ounces
Extract of white rose....	1 dram

Mix.

**For the Lips.**

Macerate 1¼ drams carmine, No. 40, in 2 ounces ammonia water in a large bottle for several days. Then add 2½ ounces essence rose triple, and 2 quarts rose water, and let stand several days, shaking frequently. Then allow to settle and decant.

**GREASE PAINTS.**

Grease paints are mostly used for theatrical purposes, in order to give the skin a decided color, as white, flesh, red, or black. They therefore contain a certain percentage of oil mixed with the powder, almond oil and coconut oil being preferred. They are sometimes sold in paste form in tin boxes, but generally in sticks. In the latter case purified melted suet is preferable to the oils.

**Black Face Paint.**

Soot .....	2 ounces
Oil of sweet almond.....	2 ounces
Cacao butter.....	6 ounces
Perfume, enough.	

The soot should be derived from burning camphor and repeatedly washed with alcohol.

**Nigger Black Face Paint.**

Beat the finest lampblack into a stiff paste with glycerin, and apply with a sponge; if necessary mix a little water with it when using. Easily removed.

**Nigger Black Face Paint.**

Lampblack .....	2 drams
Almond oil.....	2 drams
Coconut oil.....	6 drams
Oil of lemon .....	5 drops
Oil of neroli .....	1 drop

Mix.

**Flesh Face Paint.**

Prepared chalk.....	4 ounces
Zinc white.....	4 ounces
Orris root.....	1 ounce
Cinnabar .....	½ ounce
Oil of sweet almond, about .....	1½ ounces
Camphor .....	25 grains
Oil peppermint.....	20 drops
Tincture of crocus.....	2 drams
Extract of essence bouquet	1 dram

Mix.

**Pink Face Paint.**

Zinc white.....	1 ounce
Bismuth subnitrate.....	1 ounce
Asbestos .....	1 ounce
Oil of sweet almond, about .....	$\frac{3}{4}$ ounce
Camphor .....	$\frac{3}{4}$ ounce
Oil of peppermint.....	10 drops
Extract of essence bouquet .....	10 drops
Eosin .....	2 grains

Mix.

**Pink Face Paint.**

The same formula as for pink face paint, using melted purified suet in place of almond oil. Pour in molds and allow to cool.

**Red Face Paint.**

Carthamin .....	16 grains
Talc .....	$2\frac{1}{2}$ drams
Spermaceti .....	3 drams
Oil of sweet almond.....	6 drams

Melt the spermaceti and oil together on a water bath, incorporate the powders and pour in a mold.

**Red Face Paint.**

Eosin .....	16 grains
White wax.....	2 scruples
Spermaceti .....	2 scruples
White vaseline.....	$1\frac{1}{2}$ ounces

Melt together and cast in molds.

**Bright Red Face Paint.**

Oxide of zinc, subnitrate of bismuth and plumbate of alumina, of each 10 drams; eosin,  $\frac{2}{3}$  grains, dissolve in a dram of essence bouquet, oil of peppermint, 12 minims; camphor, 12 grains; almond oil, sufficient to make a paste. Mix.

**Deep Bordeaux Red Face Paint.**

Oxide of zinc, subnitrate of bismuth, plumbate of alumina, of each 15 drams; oil of peppermint, 12 minims; camphor, 12 grains; carmine, 20 grains (dissolve in 80 minims of solution of ammonia); almond oil, a sufficiency; essence of bouquet,  $1\frac{1}{2}$  drams. Mix.

**Skin Color Face Paint.**

Vermilion, 1 to 3 drams; tincture of saffron, 2 drams; powdered orris, 5 drams; precipitated chalk and zinc oxide, of each 20 drams; camphor, 20 grains; oil of peppermint, 20 minims; essence of bouquet,  $1\frac{1}{2}$  drams; almond oil, a sufficiency. Mix.

**White Face Paint.**

Prepared chalk.....	1 ounce
Zinc white.....	1 ounce
Bismuth subnitrate.....	1 ounce
Asbestos .....	1 ounce
Oil of sweet almond, about .....	20 grains
Camphor .....	6 drams
Oil of peppermint.....	1 dram
Extract of essence bouquet .....	1 dram

Mix.

**White Face Paint.**

Oxide of zinc, subnitrate of bismuth and hydroxide of alumina, of each 1 ounce. Mix, and make into a paste with almond oil (5 to 6 drams required), and perfume with 12 minims of peppermint oil, 12 grains of camphor and a dram of essence bouquet.

**Rouge Alloxan (Murexide Paint).**

Cold cream.....	1 pound
Alloxan .....	75 grains

Dissolve the alloxan in a little water and mix it intimately with any desired cold cream. The mixture is white, but when transferred to the skin gradually becomes red. The preparation sold in Austria, etc., under the name of "Schnuda" is identical with this alloxan paint.

**Fatty Paints in Sticks.**

White wax.....	2 parts
Olive oil, or almond oil, or suet .....	3 parts
French chalk.....	1 part
Zinc oxide.....	1 part

Melt wax and oil (or suet) on a water bath, add the powders, mixing well, and pour in molds. For red paints add ammoniated solution of carmine to the powders, allow to dry and add to the melted fat.

**Fatty Paints in Sticks.**

White wax.....	2 parts
Oil of benzoated suet.....	2 parts
Bismuth white.....	5 parts

These are colored red, if desired, with an ammoniacal carmine solution. The proportion of one part of carmine to 40 parts of base is most approved, and the best method of procedure is to dissolve 1 part of carmine in four-eighths parts of strongest ammonia, to mix this solution with six parts of French chalk, and to stir until the ammonia has evaporated and the mixture becomes dry. This colored chalk is then mixed with a basis made from  $13\frac{1}{2}$  parts of wax and 20 of any fixed oil.

**French Rouge, Dry.**

Powdered soapstone.....	100 parts
Carmine, No. 40.....	$2\frac{1}{2}$ parts
Ammonia water, 10 per cent .....	20 parts

Treat the carmine in a mortar with the ammonia water. When it is dissolved add the soapstone in small quantities at a time with thorough trituration.

**Rouge de Theatre, Dry.**

Powdered talc.....	5 ounces
Precipitated chalk.....	1 ounce
Carmine .....	1 scruple
Ammonia water.....	1 fl. ounce

Mix the powdered talc and chalk; digest the carmine in the water of ammonia until dissolved; mix the solution with a portion of the powders, and this with the remainder, and dry by exposure to the air.

**Rouge de Theatre, Cake.**

Take the preceding formula and mix in a mortar to a paste with water to which a small amount of mucilage of acacia has been added, mold or stamp out.

**SACHET POWDERS.**

Sachet powders are perfumed powders, put up in neat and attractive packages to be placed in one's handkerchief-box, drawer or dresser, in order to impart a certain odor. The general base of all sachet powders is orris root, which may be in the form of a fine powder, or finely granulated, and in which the desired perfume is incorporated.

**Sachet Mixture.**

Coriander .....	4 ounces
Orris root .....	4 ounces
Rose leaves.....	4 ounces
Lavender flowers.....	2 ounces
Mace .....	$\frac{1}{2}$ ounce
Cinnamon .....	$\frac{1}{2}$ ounce
Cloves .....	$\frac{1}{4}$ ounce
Calamus .....	4 ounces
Tincture of musk.....	30 minims

Commminute the solids, sprinkle over them the tincture and inclose in bags, which are to be well sewed.



**Sachet Mixture.**

Extemporaneous sachet powders can be made by taking an ounce of the base and mixing with it one dram of the perfumes. As a typical base, the following formula is recommended:

Brân .....	7 ounces
Orris root.....	1 ounce

Mix.

**Sachet Powder Base.**

Rice powder.....	1 ounce
Orris root.....	1 to 3 ounces

Mix.

**Carmen Silva Sachet.**

Rose leaves, powdered....	1 ounce
Patchouli powder.....	1 ounce
Tonka bean, in powder....	1 ounce
Orris root, powdered.....	1 ounce
Vanilla bean, powdered....	2 drams
Vanillin .....	12 grains
Heliotropin .....	12 grains
Attar of rose.....	10 drops
Oil of neroli.....	10 drops

Mix well.

**Clove Pink Sachet.**

Orris root.....	12 ounces
Lavender flowers.....	6 ounces
Patchouli leaves.....	3 ounces
Cloves .....	1½ ounces
Tonka beans.....	1½ ounces
Musk .....	12 grains
Pimenta .....	¾ ounce
Otto of rose.....	60 drops
Oil of neroli.....	60 drops
Oil of sandal .....	120 drops
Oil of lavender (English)...	60 drops

Mix.

**Essence Bouquet Sachet.**

For the body of the powder use a mixture of equal parts of orris root, sandalwood, rose leaves and orange peel. For every 14 pounds of the mixture, use to perfume the following combination: Tonquin musk, 1 grain; cumarin and vanillin, of each 5 grains; oil of rose, oil of bergamot, of each 2½ fluid drams; oil of neroli, oil of ylang ylang, of each 50 minims; oil of geranium (French), 33 minims; oil of cinnamon, oil of bitter almond, of each 13 minims; spirit of jasmine, 12 fluid ounces.

**Essence Bouquet Sachet.**

Orris root.....	4 ounces
Sandal .....	4 ounces
Rose flowers.....	4 ounces
Orange peel.....	4 ounces
Musk .....	2 grains
Cumarin .....	4 grains
Vanilla .....	4 grains
Oil of rose .....	12 drops
Oil of bergamot .....	12 drops
Oil of neroli .....	5 drops
Oil of ylang ylang.....	5 drops
Oil of geranium .....	4 drops
Oil of cassie .....	5 drops
Oil of bitter almond.....	3 drops
Extract of jasmine.....	1 ounce

Mix the solid ingredients separately, also the oils and sprinkle the oils on the first mixture. Mix intimately.

**Frangipanni Sachet.**

Orris root.....	1 pound
Tonka beans.....	4 ounces
Musk .....	10 grains
Civet .....	10 grains
Oil of rose .....	10 drops
Oil of sandal .....	10 drops
Oil of neroli .....	10 drops

Mix intimately.

**Essence Bouquet Sachet.**

Powdered orris root.....	1 pound
Musk .....	10 grains
Otto of rose.....	1 dram
Essence of lemon .....	30 drops
Essence of bergamot .....	2 drams

Mix well.

**Frangipanni Sachet.**

Orris root.....	4 ounces
Rose flowers.....	4 ounces
Wild thyme.....	1¼ ounces
Sassafras oil.....	¾ ounce
Orange peel.....	8 ounces
Musk .....	1 grain
Civet .....	1 grain
Cumarin .....	3 grains
Oil of rose .....	6 drops
Oil of sandal .....	5 drops
Oil of rose geranium.....	5 drops
Oil of bitter almond.....	2 drops
Essence of jasmine.....	1 ounce

Mix.

**Frangipanni Sachet.**

Pulverized starch.....	25 drams
Ground orris root.....	75 drams
Ground rose leaves.....	50 drams
Ground lavender flowers...	25 drams
Portugal oil.....	5 drams
Petit grain oil.....	2½ drams
African geranium oil.....	2½ drams
Ceylon cinnamon oil.....	1½ drams
Tincture of musk .....	2½ drams
Tincture of civet .....	1½ drams
Tincture of cumarin .....	10 drams
Tincture of vetivert .....	10 drams

Mix.

**Frangipanni Sachet.**

Orris root, powdered.....	1 pound
Patchouli leaves, powdered	1 oz. 2 drs.
Sandalwood .....	1 oz. 2 drs.
Oil of orange flowers .....	1 drop
Otto of rose.....	1 drop
Oil of sandalwood.....	1 drop
Musk .....	¾ grain
Civet .....	2½ grains

Mix.

**Geranium Sachet.**

Rose geranium leaves.....	48 parts
Orris root.....	96 parts
Rhodium wood.....	24 parts
Gum benzoin.....	12 parts
Oil of rose geranium .....	1 part

Reduce the drugs to fine powder, mix and add the oil.

**Heliotrope Sachet.**

Ground lavender flowers ..	50 drams
Ground orris root .....	25 drams
Ground rose leaves .....	25 drams
Ground benzoin .....	10 drams
Pulverized starch .....	50 drams
Bergamot oil.....	10 drams
Rose geranium oil .....	2½ drams
Oil of cloves .....	1½ drams
Musk tincture.....	1½ drams
Vanilla tincture.....	12½ drams
Extract heliotrope.....	25 drams
Oil of bitter almonds .....	2 drops

Mix well.

**Heliotrope Sachet.**

Orris root, in coarse powder .....	6 ounces
Vanilla, in coarse powder.	2 drams
Musk .....	3 grains
Otto of rose.....	1 drop
Oil of bitter almond.....	1 drop

Mix well.

**Heliotrope Sachet.**

Powdered orris root.....	4 ounces
Ground red rose petals .....	2 ounces
Ground tonka beans .....	1 ounce
Ground vanilla beans .....	$\frac{1}{2}$ ounce
Grain musk .....	15 grains
Bitter almond spirit (5 minims to 1 ounce).....	40 minims

Mix well.

**Heliotrope Sachet.**

Powdered orris root .....	1 pound
Powdered vanilla .....	4 ounces
Powdered benzoin.....	1 ounce
Musk .....	5 grains
Civet .....	10 grains
Oil of bitter almond.....	10 drops
Otto of rose.....	10 drops

Mix.

**Heliotrope Sachet.**

Orris root, powdered.....	1,000 parts
Rose leaves.....	500 parts
Tonka bean.....	250 parts
Vanilla .....	120 parts
Musk .....	4 parts
Oil of bitter almond.....	3 parts

Mix.

**Jockey Club Sachet.**

Sweet orange peel.....	$\frac{2}{3}$ pounds
Orris root.....	$\frac{1}{2}$ pounds
Rose leaves.....	$\frac{1}{2}$ pounds
Siam benzoin.....	4 ounces
Sandalwood .....	2 ounces
Cloves .....	1 ounce
Cumarin .....	10 grains
Musk .....	1 grain
Civet .....	1 grain
Oil of rose .....	1 dram
Oil of bergamot .....	$1\frac{1}{2}$ drams
Oil of rose geranium .....	$\frac{1}{2}$ dram
Oil of neroli .....	1 dram
Oil of cinnamon .....	10 drops
Oil of bitter almond .....	10 drops
Oil of ylang ylang .....	10 drops

Reduce the drugs to fine powder, mix and add the oils.

**Jockey Club Sachet.**

Orris root.....	600 parts
Sandalwood .....	100 parts
Oil of bergamot .....	16 parts
Oil of rose .....	1 part
Extract of musk .....	32 parts
Extract of civet .....	16 parts

Mix well.

**Jockey Club Sachet.**

Powdered orris root.....	1 pound
Musk .....	5 grains
Oil of rose .....	40 drops
Oil of bergamot .....	1 dram
Oil of sandal .....	1 dram

Mix.

**Lavender Sachet.**

Lavender flowers.....	128 parts
Thyme .....	8 parts
Mint .....	4 parts
Oil of lavender.....	1 part
Cloves .....	4 parts
Tincture of ambergris.....	2 parts

Mix.

**Lavender Sachet.**

Ground lavender flowers...	1 pound
Ground benzoin.....	1 ounce
Oil of lavender .....	$\frac{1}{2}$ ounce
Essence of musk.....	$\frac{1}{2}$ ounce

Mix.

**Lavender Sachet (Cheap).**

Lavender flowers.....	4 ounces
Benzoin .....	1 ounce
Oil of bergamot.....	25 drops
Oil of lavender (English)...	50 drops

Mix.

**Lily of the Valley Sachet.**

Pulverized starch.....	50 drams
Ground orris root .....	25 drams
Ground lavender flowers.....	$12\frac{1}{2}$ drams
Ground rose wood.....	$12\frac{1}{2}$ drams
Ground vetivert root.....	25 drams
Ground benzoin .....	25 drams
Bergamot oil.....	5 drams
Wintergreen oil.....	2 drams
Ylang-ylang oil.....	$\frac{1}{2}$ dram
Angelica oil.....	$\frac{1}{2}$ dram
Bitter almond oil.....	2 drops
Storax tincture.....	5 drams
Musk tincture.....	$1\frac{1}{2}$ drams
Muguet extract.....	25 drams

Mix.

**Marechale Sachet.**

Sandalwood .....	1 ounce
Orris root.....	1 ounce
Rose leaf.....	6 drams
Clove .....	$\frac{1}{2}$ ounce
Cassia .....	$\frac{1}{2}$ ounce
Musk .....	1 grain

Mix.

**Millefleurs Sachet.**

Orris root.....	1 pound
Musk .....	5 grains
Civet .....	10 grains
Otto of rose.....	20 drops
Oil of neroli .....	20 drops
Oil of cloves .....	30 drops
Oil of bergamot .....	1 dram

Mix.

**Millefleurs Sachet.**

Lavender flowers.....	1 ounce
Orris root.....	1 ounce
Rose flowers.....	1 ounce
Benzoin .....	1 ounce
Tonka bean.....	1 ounce
Vanilla .....	$1\frac{1}{2}$ drams
Santal .....	3 drams
Clove .....	5 drams
Cardamom .....	3 drams
Cassia .....	3 drams
Musk .....	5 grains

Mix.

**Musk Sachet.**

Orris root.....	8 ounces
Musk .....	8 grains
Ammonium carbonate.....	3 grains
Oil of rhodium.....	2 drops

Rub the musk with ammonia carbonate and mix.

**Musk Sachet.**

Ground musk root.....	50 drams
Ground exhausted musk sacs .....	50 drams
Ground lavender flowers..	50 drams
Ground benzoin.....	25 drams
Cassia oil.....	$2\frac{1}{2}$ drams
Palma rose oil.....	$2\frac{1}{2}$ drams
Clove oil.....	$2\frac{1}{2}$ drams
Musk tincture.....	$22\frac{1}{2}$ drams

Mix well.

**New Mown Hay Sachet.**

Deer tongue leaves.....	2 ounces
Orris root.....	1 ounce
Damascene rose petals....	1 ounce
Orange flowers .....	1 ounce

The ingredients, in coarse powder, are mixed and sifted.

**Musk Sachet.**

Orris root.....	1 pound
Musk .....	12 grains
Oil of rose .....	24 drops

Mix.

**Musk Sachet (Cheap).**

Orris root.....	1 pound
Artificial musk.....	15 grains

Mix.

**New Mown Hay Sachet.**

Orris root.....	2,200 parts
Tonka beans.....	300 parts
Vanilla .....	300 parts
Oil of bitter almond .....	1 part
Oil of rose geranium .....	12 parts
Oil of rose .....	3 parts
Oil of bergamot .....	6 parts
Extract of musk.....	64 parts

The solids should be in coarse powder, freshly ground and well mixed.

**Orange Sachet.**

Ground orange peel.....	100 drams
Ground lemon peel.....	50 drams
Ground lavender flowers.....	25 drams
Portugal oil.....	10 drams
Neroli oil.....	1½ drams
Petit grain oil.....	1½ drams
Bergamot oil.....	2½ drams
Musk tincture.....	1½ drams
Musk root tincture.....	10 drams

Mix.

**Oriental Sachet.**

Sandal .....	2 ounces
Rhodium (wood).....	2 ounces
Cloves .....	2 ounces
Cassia .....	1 ounce
Orris .....	4 ounces
Calamus .....	4 ounces
Benzoin .....	1 ounce
Myrrh .....	1 ounce
Orange peel.....	4 ounces
Rose leaves .....	4 ounces
Ambrette seed.....	2 ounces
Essence of ambergris.....	½ ounce

Reduce to a coarse powder and mix.

**Patchouli Sachet.**

Ground patchouli leaves.....	100 parts
Ground rose leaves.....	25 parts
Ground lavender flowers.....	25 parts
Patchouli oil.....	2½ parts
Oil of cloves.....	1 part
Bergamot oil.....	2½ parts
African geranium oil.....	2½ parts

Powder the drugs and mix.

**Patchouli Sachet.**

Powdered orris root.....	4 ounces
Powdered patchouli.....	2 ounces
Otto of rose.....	10 drops
Oil of patchouli.....	20 drops

Mix.

**Portugal Sachet.**

Orange peel.....	4 ounces
Coriander .....	1 ounce
Cloves .....	½ ounce
Storax .....	1 ounce
Benzoin .....	½ ounce
Ambregris .....	20 grains
Musk .....	8 grains
Oil of cassia .....	10 drops
Oil of patchouli .....	2 drops
Oil of rose geranium .....	1 drop

Mix well.

**Reseda Sachet.**

Ground orris root.....	100 drams
Ground rose leaves .....	50 drams
Ground rose wood .....	25 drams
Clove oil.....	2½ drams
African geranium oil.....	2½ drams
Bergamot oil.....	2½ drams
Musk root tincture.....	10 drams
Vanilla tincture.....	5 drams
Musk tincture.....	1 dram
Extract of reseda.....	25 drams

Mix.

**Rose Sachet.**

Powdered orris.....	½ pound
Rose leaves.....	1½ pounds
Ground sandalwood.....	4 ounces
Patchouli leaves.....	2 ounces
Extract of civet.....	½ ounce
Oil of rose geranium.....	30 minims
Otto of rose.....	20 minims

Break up the leaves, and mix the whole together. The oils and extracts should be mixed with the powders previously.

Mix.

**Rose Sachet.**

Ground rose leaves.....	50 drams
Ground rose wood.....	50 drams
Pulverized starch.....	50 drams
Turkish rose oil.....	1½ drams
Rose geranium oil.....	2½ drams
Oil of cloves.....	1 dram
Bergamot oil.....	2½ drams
Musk tincture.....	1 dram

Mix the powders and add the oils.

**Rose Sachet.**

Rose flowers.....	4 ounces
Oil of rose geranium .....	8 drops
Oil of rose .....	8 drops
Essence of ambergris .....	1 dram
Essence of musk.....	1 dram

Mix.

**Rose Sachet.**

Rose leaves.....	6 ounces
Orris root.....	4 ounces
Rhodium wood.....	4 ounces
Santal wood.....	2 ounces
Benzoin .....	1 ounce
Brazil wood.....	½ ounce
Otto of rose.....	20 drops

Powder the drugs and add the oil.

**White Rose Sachet.**

Powdered orris root.....	4 ounces
Rice flour.....	2 ounces
Otto of rose.....	½ dram
Oil of patchouli.....	4 drops

Mix.

**Red Rose Sachet.**

Orris root.....	4 ounces
Sandalwood .....	2 ounces
Cedar wood.....	2 ounces
Musk .....	1 grain
Oil of rose.....	15 drops

Reduce the drugs to a coarse powder and incorporate the perfume.

**Vervain Sachet.**

Lemon peel.....	16 ounces
Lemon thyme.....	4 ounces
Oil of lemongrass .....	60 drops
Oil of lemon .....	½ ounce
Oil of bergamot .....	½ ounce

Powder and mix.

**Verbena Sachet.**

Powdered orris root.....	8 ounces
Civet .....	3 grains
Oil of lemongrass.....	15 grains
Otto of rose.....	5 drops

Mix.



**Victoria Sachet.**

Ground lavender leaves...	50 drams
Ground rose wood,	
Ground rose leaves, of each	25 drams
Ground orange peel	12½ drams
Ground benzoin	25 drams
Ground vetivert root	12½ drams
Oil of Turkish rose	1 dram
Oil of bergamot	2½ drams
Oil of cloves	1 dram
Oil of verbena	1 dram
Musk tincture	1½ drams
Civet tincture	1 dram

Mix.

**Violet Sachet.**

Ground orris root	125 drams
Ground lavender flowers	50 drams
Pulverized starch	50 drams
Liquid orris root	2½ drams
Sandalwood oil	½ dram
Musk tincture	2 drams
Extract of violette	25 drams

Mix well.

**Violet Sachet.**

Powdered orris root	1 pound
Essence of musk	2 drams
Oil of bergamot	10 drops
Oil of bitter almond	6 drops
Otto of rose	6 drops

Mix.

**Ylang Ylang Sachet.**

Orris root	12 ounces
Rose flowers	12 ounces
Orange peel	16 ounces
Cumarin	2 grains
Vanillin	4 grains
Civet	1 grain
Musk	1 grain
Oil of ylang ylang	30 drops
Oil of rose	20 drops
Oil of bergamot	10 drops
Essence of jasmine	1 ounce

Mix well.

**Ylang Ylang Sachet.**

Orris root	500 parts
Benzoin	16 parts
Musk	8 parts
Oil of ylang ylang	2 parts
Oil of rose	1 part

Mix well.

**Potpourri.**

What is generally known as potpourri is a mixture of coarsly powdered aromatic drugs and resins and dried odorless leaves, especially rose petals. There is no distinct odor to them, but the aim is to produce a confusedly mixed perfume without individuality. They are generally kept in coarse powder in fancy jars or vases. The following formulas are typical but may be changed by omitting or adding one or more ingredients.

**Potpourri.**

Rose leaves	4 ounces
Lavender flowers	8 ounces
Vanilla	1 dram
Cloves	1 dram
Storax	1 dram
Benzoin	1 dram
Ambergris	20 grains
Oil of rose	20 drops

Reduce to coarse powder and mix.

**Potpourri.**

Lavender flowers	1 pound
Rose leaves, crushed	1 pound
Orris root in pieces about the size of a split pea	½ pound
Cloves, bruised	2 ounces
Cinnamon, bruised	2 ounces
Allspice, bruised	2 ounces
Table salt	1 ounce

Mix on a piece of paper with the hands.

**Potpourri.**

Dried rose petals	2 ounces
Orris	2 ounces
Pimenta	½ ounce
Cascarilla	¼ ounce
Musk	2 grains
Cloves	½ ounce
Oil of rose	2 drops

Reduce the drugs to a coarse powder, add the perfume and mix with a spatula.

**Potpourri.**

Rose petals,  
Orange blossoms,  
Lavender flowers, of each,  
a sufficient quantity.

Mix them in any proportion desired and sprinkle the mixture with table salt.

**Potpourri.**

Yellow sandalwood	3 ounces
Gum benzoin	½ ounce
Orris root	3 ounces
Cloves	½ ounce
Mace	¼ ounce
Tonquin beans	½ ounce
Musk	10 grains
Oil of rose	10 drops
Oil of lavender	15 drops
Oil of bergamot	½ fl. dram
Oil of lemon	½ fl. dram

Reduce the drugs to a coarse powder, sprinkle the mixed oils on them and mix coarsely.

**Potpourri.**

Vanilla,  
Orris root,  
Cloves,  
Cinnamon, of each, equal parts.

Reduce to a coarse powder and mix.

**Potpourri.**

A mixture of equal parts of the powders made according to the two preceding formulas, gives a delightful potpourri.

**Smelling Salts.**

The base of smelling salts is carbonate of ammonia, from which the ammonia slowly escapes. The carbonate is generally mixed with some aromatic powder or liquid, in which the lavender perfume is mostly predominating. A better base than ammonium carbonate is a mixture of potassium carbonate and ammonium chloride, from which the volatile carbonate is slowly generated. Care should be taken to have a container with a good stopper, for the secret of inexhaustible salts lies more in the stopper than in the salt.

**Smelling Salts, Base.**

Ammonium chloride	8 ounces
Potassium carbonate	3 ounces
Camphor	40 grains

Mix.

**Smelling Salts.**

Carbonate of ammonia, crushed small	1 pound
Oil of lavender (Mitcham)	1 fl. ounce
Oil of bergamot	1 fl. ounce
Oil of cloves	2 fl. drams
Oil of cassia	1 fl. dram

Rub them thoroughly together, sublime at a very gentle heat into a well-cooled receiver and at once put the product into a well-stoppered bottle or bottles. The sublimation may be omitted, but the quality of the product suffers. This is varied, in some samples, by substituting 1 ounce of oil of lemon, or a little of the oils of rosemary and sweet flag (*calamus aromaticus*), for the oils of cloves and cassia; or by adding after sublimation a dash (2 or 3 drops per bottle) of essence of musk or essence of royale.

**Smelling Salts.**

Make as in the preceding formula, but taking as perfume—

Oil of bergamot .....	2 fl. ounces
Oil of yerbena .....	$\frac{1}{2}$ fl. ounce
Otto of roses.....	1 to 2 drams

It may be varied as in the preceding formula.

**Smelling Salts.**

Follow the first formula, but use—

Oil of bergamot .....	$\frac{3}{4}$ fl. ounce
Oil of lemon .....	$\frac{3}{4}$ fl. ounce
Essence de petit grain.....	3 fl. drams
Oil of cloves .....	1 fl. dram
Oil of cassie .....	1 fl. dram

Varied, as before, at will.

**White Smelling Salts.**

Mix in a capacious porcelain mortar 2 pounds of ammonium carbonate with 1 pound of ammonia, cover the mortar and let it stand quietly. In the course of a few days the contents have been converted into normal carbonate of ammonia. The latter is reduced to a coarse powder and perfumed with bergamot oil, lavender oil, nutmeg oil, clove oil and rose oil, as desired.

**Catarrh Smelling Bottle.**

Crystallized carbolic acid.	3 ounces
Ammonium carbonate.....	2 ounces
Stronger ammonia water, q. s.	
Camphor .....	3 drams
Oil of eucalyptus.....	3 drams
Pine wood sawdust, q. s.	

Powder the ammonium carbonate, rub down the solids with the sawdust, and drop on the solution of ammonia to make fairly moist.

**Crystallized Smelling Salts.**

Fill the bottles with crystals of potassium sulphate; then pour in as much of the following solution as they will conveniently hold:

Stronger ammonia water..	15 ounces
Oil of lavender .....	30 drops
Oil of cloves .....	5 drops
Essence of lemon.....	1 dram

**Inexhaustible Smelling Salts.**

Ammonium chloride 8 ounces, potassium carbonate 3 ounces, oil of cloves, cinnamon and rosemary, of each 15 drops.

**Inexhaustible Smelling Salts.**

Oil of bergamot .....	24 grains
Oil of lavender .....	45 grains
Oil of mace .....	24 grains
Oil of cloves .....	24 grains
Oil of rosemary .....	45 grains
Water of ammonia.....	1 quart

The aromatics are placed in a bottle, the ammonia is added, and the bottle vigorously shaken; the solution is soon effected, and the turbid liquid can be at once filled into bottles.

**Preston Smelling Salts.**

Crushed ammonium carbonate .....	$\frac{1}{2}$ ounce
Oil of rose .....	1 drop
Oil of lemon .....	5 drops
Oil of lavender .....	5 drops
Oil of cloves .....	3 drops

Mix and put in smelling bottle.

**Pungents.**

Powdered ammonium chloride .....	12 drams
Powdered potassium carbonate .....	14 drams
Powdered camphor.....	1 dram
Powdered ammonium carbonate .....	3 drams
Oil of cloves and bergamot, of each.....	10 drops

**Essence for Vinaigrettes.**

To be used with pieces of ammonium carbonate:

Alcohol .....	4 ounces
Oil of lavender .....	$1\frac{1}{2}$ drams
Oil of bergamot .....	$1\frac{1}{2}$ drams
Oil of cloves .....	$\frac{1}{2}$ dram
Oil of cinnamon .....	$\frac{1}{2}$ dram
Oil of rose .....	5 drops
Tincture of musk.....	1 dram
Concentrated ammonia....	4 ounces

**NAIL POLISHES.**

The art of manicuring has become so popular in America that polishes of all kinds are often called for. These polishes are either powders, pastes or liquids. The pastes are preferred by most manicurists. Powders can be converted into pastes by mixing them with a little oil, or glycerin.

**Nail Powder.**

Oxide of tin, very fine...	4 ounces
Carmin .....	25 grains
Oil of bergamot .....	10 drops
Oil of lavender .....	10 drops

Mix intimately.

**Nail Polishing Powder (Oleate of Tin).**

White castile soap..... 1 part  
Hot water ..... 10 parts |

Adding gradually to the liquid a 10 per cent solution of chloride of tin until precipitation no longer occurs. The precipitate is the oleate, which, after washing with water and drying is ready for use. It is sometimes colored with a little carmine to improve the appearance. Any substance used as a polisher for the nails should be exceedingly fine powder, and be carefully employed.

**Nail Powder.**

Oleate of tin (ir powder).	2 ounces
Powdered pumice stone...	1 ounce
Oil of lavender.....	5 drops

Mix and pass through a fine sieve.

**Nail Powder.**

Cinnabar .....	1 ounce
Emery powder.....	1 ounce
Oil of bitter almond.....	2 drops

Mix and sift.

**Nail Powder.**

Putty powder.....	4 ounces
Carmin .....	10 grains
Oil of rose .....	3 drops
Oil of neroli .....	3 drops

Mix well.

**Nail Polish, White Paste.**

Tin peroxide.....	6 ounces
Tragacanth .....	6 grains
Glycerin .....	4 drops
Rose water, sufficient.	

Mix and make into a paste.

**Nail Paste, Red.**

Tin peroxide.....	6 ounces
Tragacanth .....	6 grains
Glycerin .....	4 drops
Liquid carmine.....	2 drams
Rose water, sufficient.	

Mix and make into a paste.

**Nail Paste.**

Nail powder (tin oleate and emery).....	4 ounces
Oil of almond, sufficient.	

Make into a paste.

**Nail Paste.**

Nail powder (cinnabar- emery combination).....	4 ounces
Glycerin .....	1 dram
Rose water, sufficient.	

Mix and make into a paste.

**Nail Paste.**

Bismuth oleate.....	2 drams
Lanolin .....	6 drams
Oil of almond .....	2 ounces

Mix well and perfume.

**Finger Nail Dressing.**

Sulphuric acid.....	5 drops
Tincture of myrrh.....	1 dram
Water to make.....	4 ounces

Mix.

First clean the nails with a stiff brush and soap, and then plunge them into the above mixture and hold them there for five minutes.

**Nail Bleach.**

Diluted sulphuric acid....	2 drams
Tincture of myrrh.....	1 dram
Rose water, enough to make .....	4 ounces

Mix.

**Nail Bleach.**

Tartaric acid.....	1 dram
Tincture of myrrh.....	1 dram
Cologne water.....	3 ounces

Mix.

**Nail Varnish.**

Paraffin .....	1 dram
Otto of roses.....	3 drops
Chloroform .....	2 ounces

Dissolve.

**Cera Fortifiant. for the Nails.**

Oil of almond.....	$\frac{1}{2}$ ounce
Common salt, powdered... $\frac{1}{2}$ dram	
Resin, powdered.....	1 scruple
Alum, powdered.....	1 scruple
Wax .....	1 scruple

Mix together:

Oil of bitter almond.....	2 ounces
Oil of tartar .....	2 drams
Essence of lemon.....	6 drops

For frequent application when the nails are weak or loosened.

**LIP SALVES AND LOTIONS.****Lip Salve.**

White vaseline .....	8 ounces
White wax .....	3 ounces
Color and perfume.	

To give it color use ten grains alkannin, or take about 200 grains alkanet root. If the latter heat it gently over a warm bath until the color is satisfactory. Strain and when cooling add the perfume. This basis for lip salve may be varied as follows:

Cacao butter.....	8 ounces
White wax .....	1 ounce

Or,

Benzoinated lard.....	8 ounces
White wax.....	5 ounces

Or,

Oil of sweet almond.....	8 ounces
White wax.....	5 ounces

Or,

Purified mutton tallow...	8 ounces
White wax.....	4 ounces

And the addition of camphor  $\frac{1}{2}$  to 1 ounce  
Or Peruvian balsam  $\frac{1}{2}$  to 1 ounce  
Or tannic acid.....  $\frac{1}{2}$  ounce

Will give change enough for a new name to suit.

**Lip Salve.**

White wax.....	$1\frac{1}{2}$ ounces
Almond oil.....	3 ounces
Carmine .....	6 grains
Otto of rose.....	6 drops

Melt the wax and oil together, dissolve the carmine in a few drops of ammonia water, add to the oil and stir. When nearly cool add the otto of rose.

This salve may be cast into molds.

**Lip Salve.**

White precipitate.....	25 grains
Carmine .....	5 grains
Cold cream.....	1 ounce

Mix well.

**Lip Pomatum.**

Paraffin .....	4 ounces
Paraffin oil.....	4 ounces
Oil of bergamot .....	25 drops
Oil of lemon.....	25 drops

Color with 10 grains alkannin (or use alkanet root and strain). When melted and colored pour the mass into thick glass tubing about  $\frac{1}{2}$  inch internal diameter, and push out with a stick when cold.

**Lip Salve.**

Spermaceti .....	2 ounces
Lard, perfectly pure and fresh .....	4 ounces
White wax.....	1 ounce
Oil of sweet almond.....	$\frac{1}{2}$ ounce

Melt together, and color the mixture with a sufficient quantity of alkanet, by digesting the root with the melted mass; then suitably perfume, for instance, with—

Oil of bergamot .....	$\frac{1}{2}$ dram
Oil of orange .....	$\frac{1}{2}$ dram

The mass is then poured into molds. It is customary to pour it into tin tubes, from which it is removed when cold, and then covered with tin foil.

**Lip Salve.**

Almond oil.....	$4\frac{1}{2}$ ounces
Spermaceti .....	6 drams
White wax.....	$2\frac{1}{4}$ ounces
Carmine .....	18 grains
Balsam of peru.....	45 drops
Otto of rose.....	30 drops

Melt the spermaceti and wax, add the almond oil, the balsam of peru, and finally the carmine and otto.

**Lip Salve.**

Oil of almond, sweet....	8 ounces
White wax.....	1 ounce
Potassium chlorate, pow- dered .....	2 drams
Carmine .....	2 grains

Mix with gentle heat, stir while cooling, and perfume to suit.

**Lip Salve.**

Cold cream.....	1 ounce
Glycerin .....	$\frac{1}{2}$ dram
Tincture of benzoin.....	20 drops
Carmine, quantity sufficient.	

Rub the carmine with the glycerin and incorporate with the cold cream; then add the tincture of benzoin and rub the ointment until the alcohol of the tincture has evaporated.

**Vaseline Lip Salve.**

Vaseline, white.....	4 ounces
White wax.....	2 ounces
Carmine .....	8 grains
Otto of rose.....	10 drops

Melt the vaseline and wax, dissolve the carmine in a few drops of ammonia water, add to the vaseline mixture, stir, and when nearly cold, add the rose oil.



**Coral Sticks.**

Paraffin .....	6 drams
Cacao butter.....	6 drams
White vaseline.....	2 ounces
Carmine .....	10 grains
Otto of rose.....	5 grains

Prepare like the preceding, and cast into sticks.

**Rose Lip Salve.**

Paraffin .....	1 ounce
Cacao butter.....	1 ounce
Petrolatum .....	1 1/4 ounces
Eosin .....	1 gram
Oil of rose.....	5 drops

The last two ingredients are dissolved in the least quantity of alcohol and added to the fats after melting.

**Rose Lip Salve.**

Oil of sweet almond.....	1 1/2 ounces
Alkanet root.....	2 drams
White wax.....	6 drams
Spermaceti .....	2 drams
Otto of rose.....	6 drops

Heat the oil of almond and alkanet, and filter through flannel; then melt the wax and spermaceti. When melted, add the filtered oil of almond to the mixture. Remove from the fire when all the ingredients are thoroughly incorporated; then add the otto. Agitate the mixture with a bone spatula until it is cold.

**Cream for Chapped Lips.**

White wax.....	4 ounces
Simple cerate.....	3 ounces
Powdered borax.....	2 1/2 drams
Rose water.....	2 ounces
Oil of bergamot .....	25 drops
Oil of cloves .....	5 drops
Oil of lavender flowers....	10 drops

Color.

Melt the wax and cerate on a water bath. Dissolve the borax in the rose water, warm the solution and add to the mixture, stir, add the oils (and color). Mix well.

**Salve for Cracks and Irritation Around the Nose.**

Sublimed sulphur.....	20 grains
Camphor .....	5 grains
Ointment of zinc oxide...	1 ounce

Apply to the irritated surface.

**APPLICATIONS FOR THE HANDS.****Almond Cosmetic Paste for the Hands.**

Sweet almonds, blanched..	24 ounces
Rice powder.....	4 ounces
Orris powder.....	4 ounces
Spermaceti .....	1/2 ounce
Oil of almond.....	2 ounces
Neutral soap.....	2 ounces
Oil of bitter almond.....	60 minims
Oil of bergamot .....	180 minims
Oil of rose .....	30 minims
Rose water, a sufficiency.	

The first 3 ingredients with enough rose water, are to be beaten into a smooth paste; the spermaceti, oil of almond and soap are to be heated and incorporated, then added to the former paste and the perfumes added. When adding the two mixtures care must be taken that both have about the same temperature.

**Amandine for the Hands.**

Almond oil.....	6 to 7 pounds
Simple syrup.....	4 ounces
White soft soap.....	1 ounce
Perfume to suit.	

Add the perfume oils to 4 pounds of the almond oil. Rub the soap with the syrup until perfectly incorporated, then in a capacious mortar slowly add the perfumed oil and afterward the balance of the almond oil, so long as it will incorporate. It should make a translucent jelly-like mass. Avoid adding oil in excess of what may be needed to attain this condition. The perfume should be almond, but modified by some pleasant mixture.

**Chapped Hands and Lips.**

Resin .....	1 ounce
White wax.....	2 drams
Lard .....	2 ounces
Zinc oxide.....	7 drams

Melt the first three ingredients on a water bath, then incorporate the zinc oxide.

**Chapped Hands.**

Menthol .....	90 grains
Salol .....	120 grains
Olive oil.....	120 grains
Lanolin .....	12 troy ounces

Mix the menthol and salol in a mortar, and add the oil gradually. Melt the lanolin on a water bath and add the solution.

**Chapped Hands.**

Glycerin .....	1 fl. ounce
Tincture of opium.....	1 fl. ounce

Apply to hands after washing, night and morning. Also useful for chilblains, chafes, etc.

**Chapped Hands.**

Quince seed.....	1/2 av. ounce
Water, q. s.	
Glycerin .....	1 fl. ounce
Alcohol .....	4 fl. ounces

Macerate the quince seed with a pint of water for 24 hours, stirring frequently, strain with gentle pressure through muslin, and make up the volume to 1 pint with water; then add the glycerin and finally the alcohol containing the perfume, and stir briskly.

**Chapped Hands.**

Rub gently into the skin every day a mixture of 2 ounces each of glycerin and egg albumen, perfumed with 2 drops of otto of rose.

**Chapped Hands, Sore Nipples.**

Tincture of benzoin com- pound .....	1 ounce
Glycerin .....	4 ounces

Mix.

**Chapped Hands.**

Lanolin .....	1 dram
White vaseline.....	3 drams
Glycerin .....	4 drams
Camphor, powder.....	1/2 dram

Melt lanolin and vaseline, add the camphor and when dissolved, add the glycerin, stirring till cold.

**Chapped Hands.**

Green soap.....	2 ounces
Compound benzoin tincture	1/2 ounce
Glycerin .....	1 ounce
Rose water.....	4 ounces

Mix the soap with the rose water until dissolved, add the tincture slowly and finally the glycerin. Mix well.

**Chapped Hands (Vigier's Embrocation).**

Tannic acid.....	1 dram
Glycerin .....	3 ounces
Rose water, enough to make .....	1 pint

Mix and filter.

**Chapped and Rough Hands.**

Suet, or lanolin.....	1 ounce
Camphor .....	20 grains
Glycerin .....	½ ounce

Melt the ingredients together, then pour the mixture into some vessel and allow it to cool. Soften a lump of the salve in the palm of the hand, and rub it well into the skin before retiring at night.

**Chapped and Rough Hands.**

Ointment of zinc oxide...	1 ounce
Camphor .....	5 grains
Bismuth subnitrate.....	½ dram
Ointment of rose water...	½ ounce

Mix and apply at night.

**Chapped and Rough Hands.**

Glycerin .....	1 ounce
Lime water.....	½ ounce

Mix, apply before retiring.

**Glycerole for Chapped Hands:**

Tincture of benzoin (simple) .....	1 dram
Glycerin .....	2 drams
White soap.....	15 grains
Rose water.....	½ ounce

Rub the soap, in powder, with the rose water until dissolved, add the tincture and glycerin and mix well.

**Glycerin and Cocoa Cream for Chapped Hands.**

White wax.....	14 ounces
Spermaceti .....	3 ounces
Cacao butter.....	9 ounces
Castor oil.....	9 ounces
Oil of benne.....	6 ounces

Melt and mix; then add glycerin, 2 ounces. Perfume to taste. Some prefer petrolatum to oil of benne (sesame oil).

**Milk of Roses for Chapped Hands.**

Almonds, bleached.....	1 ounce
Rose water.....	8 ounces
White wax.....	1 dram
Almond oil.....	2 ounces
White castile soap.....	1 ounce
Honey .....	2 drams
Cologne .....	1 fl. ounce
Oil of bitter almond.....	4 drops
Oil of rose geranium.....	5 drops
Glycerin .....	½ fl. ounce

Blanch the almonds and beat to a paste, adding the rose water; heat this to about 125° F., and incorporate with the white wax, almond oil and soap, melted together; then add the other ingredients.

Directions: After washing the hands with warm water and castile or palm soap, apply the milk of roses, rubbing it thoroughly in, then wipe the hands with a dry towel.

**Ointment for Chapped Hands.**

Bismuth oxide.....	1 dram
Oleic acid.....	1 ounce
White wax.....	3 drams
Vaseline .....	1 ounce
Oil of roses.....	2 drops

Apply the mixture three times a day. Melt the wax and vaseline, add the oxide of bismuth rubbed up with the oleic acid. When nearly cold add the perfume.

**Pomade for Chapped and Cracked Hands.**

Campho-phenique .....	50 parts
Vaseline or lanolin.....	100 parts

Mix, and apply two or three times a day.

**Pomade for Rough and Chapped Hands.**

Lanolin .....	4 ounces
Petrolatum .....	6 ounces
Campho-phenique .....	½ ounce
Oil of roses.....	10 drops

Mix, and make into a pomade.

This should be well rubbed over the hands at night before going to bed and left on until morning. After washing and drying the hands in the morning, apply a very small amount to them.

**Cream for Red Hands.**

Lanolin .....	10 ounces
Vaseline oil.....	3 ounces
Vanillin .....	1 grain
Otto of rose.....	5 drops

Mix.

The cream to be applied to the hands every night.

**Soft, White Hands.**

Lanolin .....	2 ounces
Vanillin .....	2 grains
Otto of rose.....	1 drop

Mix.

**Thick Skin on Hands or Feet.**

Salicylic acid.....	½ dram
Ointment of oleate of lead	½ ounce

Spread on muslin and use on the surface.

**Moisture of the Hands.**

Chromic acid.....	5 grains
Distilled extract of witch-hazel .....	½ ounce

Especially useful for moist, clammy hands. Drop over the surface several times a day.

**Moisture of the Hands.**

Zinc oleate.....	1 dram
Bismuth subnitrate.....	2 drams
Beta-naphthol .....	10 grains

Dust frequently over the surface.

**Moisture of the Hands.**

Salicylic acid.....	1 dram
Impure zinc carbonate....	1 ounce

Dust over the surface.

The powder made by this or the preceding formula should be used after applying the chromic acid solution given above.

**Moisture of the Hands.**

Rub the hands several times a day with a mixture of tincture of belladonna, ½ ounce; cologne water, 4 ounces.

**Sweating of the Hands.**

Rub on the hands, three times a day, a solution of 5 parts each of borax and boric acid, and 15 parts each of salicylic acid and glycerin, in 30 parts of alcohol.

**Sweating Hands.**

Formalin .....	½ ounce
Rose water.....	8 ounces

Mix and apply several times a day.

**Sweating Hands and Feet.**

Use a soap made as follows: On the water bath melt 15 parts of fat soap, add 1 part of tannin, mix thoroughly and stir in enough starch to effect the right consistency.

## COLD CREAMS.

Cold cream is one of the oldest pharmaceutical preparations, being recommended by Galenus in the second century under the name of "Ceratum Galeni." The official formula for cold cream is an excellent one. There are, however, so many other formulas that it is impossible to pass the subject by without mentioning a few. All cold creams are mechanical mixtures of oils and fats with water. In making cold cream, care should be taken to have the liquid or melted fats and the aqueous part of the ointment as near as possible at the same temperature. The failure in producing a good snow white cream is generally due to a disregard of this most important requirement, the temperature of admixture. A great number of the cold creams of the market are saponified by the addition of a small quantity of borax, which acts as a saponifying agent, and also produces a fine snow white color. By using liquid paraffin (white oil) in place of almond oil, a more permanent cold cream is produced; but it is less beneficial as a healing agent. All kinds of oils, waxes and fats may be used, and the formulas below cover all the different types of cream.

### Cold Cream (General Formula).

Liquid paraffin.....	16 ounces
White wax, pure.....	4 ounces
Spermaceti .....	1 ounce
Borax .....	1/2 dram
Rose water.....	8 ounces

Melt the paraffin wax and spermaceti. Dissolve the borax in the rose water, and when both mixtures have reached the same temperature (125° F. is the best), pour the borax solution slowly into the melted fats, stirring continuously. Pour into suitable jars or pots when it begins to thicken and allow to cool without disturbing. If made in this way, the cold cream is perfectly white with a beautiful glossy surface. The quantity of wax or spermaceti must be increased in hot weather. In place of the rose water, plain distilled water may be used and any perfume added after saponification is complete. This method of making cold cream is to be used in all of the following formulas that contain borax, unless special methods are given. For all other cold creams, without borax, the formula of the U. S. Pharmacopoeia should be used.

### Cold Cream.

White wax.....	4 ounces
Spermaceti .....	5 ounces
Peanut oil.....	32 ounces
Rose water.....	16 ounces

Melt on a water bath, and, having removed the bath, stir well until cool.

### Cold Cream.

Melt together on a water bath 4 parts of white wax, 5 parts of spermaceti, 28 parts of oil of arachis. Remove from the bath, stir vigorously, add another 4 parts of oil of arachis, then 16 parts of rose water containing 1-6 part of borax dissolved in it. For perfume use a drop of attar of rose to every 2 ounces.

### Simple Cold Cream.

White wax.....	5 troy ounces
Spermaceti .....	5 ounces
Oil of sweet almond.....	40 fl. ounces

Melt together; when nearly ready to congeal whip to a froth, adding gradually a solution of:

Borax .....	150 grains
Distilled water.....	8 fl. ounces
Lastly add:	
Cumarin .....	1 1/2 grains
Oil of rose .....	45 grains
Oil of neroli .....	15 grains
Oil of rose geranium.....	10 drops
Oil of ylang ylang.....	4 drops
Oil of orris .....	2 drops
Tincture of ambergris	
(1:10) .....	6 drops

Mix.

### Cold Cream.

Quince seed mucilage.....	10 drams
Almond oil soap.....	15 grains
Stearic acid.....	2 1/2 drams
Glycerin .....	1/2 dram

Rub the stearic acid and soap together in a warm mortar; add gradually the mucilage, so as to form an emulsion; lastly, add the glycerin. It may be perfumed with oil of rose, or any perfume desired.

### Cold Cream.

Cottonseed oil.....	15 ounces
Spermaceti .....	3 ounces
White wax.....	3 ounces
Oil of lavender.....	12 drops
Rose water.....	8 ounces
Borax .....	1/2 dram

Prepare as directed in the general formula given above.

### Cold Cream.

Lanolin .....	8 ounces
Vaseline .....	2 ounces
Rose water.....	4 ounces
Vanillin .....	3 grains
Otto of rose.....	2 drops

Mix in mortar, without heat.

### Cold Cream.

Spermaceti .....	3 ounces
White wax.....	3 ounces
Nut oil.....	22 ounces
Rectified spirit.....	1 ounce
Water .....	4 ounces
Chloroform.....	10 drops
Oil of rose geranium.....	30 drops
Oil of bergamot .....	6 drops

Prepare as directed in the U. S. P. process.

### Cold Cream.

White wax.....	2 ounces
Spermaceti .....	3 ounces
Almond oil.....	8 ounces
Prepared lard.....	5 ounces
Water .....	6 ounces
Otto of rose.....	10 drops
Oil of bergamot.....	10 drops

Prepare as directed in the U. S. P. process.

### Cold Cream.

White wax.....	2 1/2 ounces
Spermaceti .....	5 ounces
Almond oil.....	16 ounces
Rose water.....	6 ounces
Otto of rose.....	20 drops

Prepare as directed in the U. S. P. process.

This is a rather hard cream.

### Cold Cream, Improved.

Put 9 drams white wax, 9 drams spermaceti, 7 ounces water, 6 ounces of expressed oil of almond, and 1 ounce of precipitated chalk into an earthenware vessel, melt by the heat of a water bath; add 6 ounces more of oil of almond, and stir until cold. The more stirring the better. When cold add 12 drops of chloroform and otto of rose ad libitum.



**Almond Cosmetic Cream.**

Almonds, blanched..... 1 ounce  
 Rose water..... 4 fl. ounces  
 Beat the almonds to a paste and add the rose water; heat to boiling point and add:

White wax..... 1 ounce  
 Almond oil..... 2 fl. ounces  
 White castile soap..... 1 ounce

Mix thoroughly and add:

Solution boric acid, saturated ..... 2 fl. ounces  
 Cologne water..... 1 fl. ounce  
 Oil of bitter almond..... 4 drops  
 Oil of rose geranium..... 5 drops  
 Glycerin ..... 1 fl. ounce

Thoroughly incorporate.

**Almond Glycerin.**

Oil sweet almond..... 4 gallons  
 (or lard oil.)

Lime water..... 5 gallons

Saccharated solution of lime ..... 10 ounces

Mix the lime water with the solution of lime, and then add one pint of oil, and shake well; repeat this process until the oil is mixed, then add the following:

Oil of fennel ..... 2 ounces  
 Oil of sassafras ..... 3 ounces  
 Oil of thyme, white..... 1 ounce  
 Oil of rosemary ..... 1 ounce  
 Oil of cinnamon (cassia). 4 ounces  
 Oil of cloves ..... 1 ounce  
 Oil of lavender ..... 1 ounce

**Bear's Grease (Factitious).**

Washed hog's lard (dry). 1½ pounds  
 Melt it by the heat of a water bath; add of—

Balsam of peru..... 2 drams  
 Flowers of benzoin..... 1 dram  
 Palm oil (bright)..... 1 dram

Stir vigorously for a few minutes to promote solution. Then remove the pan from the bath, and after repose for a short time pour off the clear portion from the sediment, and stir the liquid mass until it begins to cool.

**Bear's Grease (Imitation).**

Soft veal fat..... 1 pound  
 Palm oil..... ½ dram

Melt and when nearly cold stir in of—

Nitrous ether (genuine).. 2 fl. drams  
 Essence of ambergris.. 7 or 8 drops

**Bear's Grease (Imitation).**

Hog's lard..... 1 pound  
 Veal suet..... 1 pound  
 Olive oil..... 3 ounces

Melt, cool a little, and stir in of compound tincture of benzoin 1 fluid ounce.

**Boro Glycerin Cream.**

Oil of sweet almond..... 100 parts  
 White vegetable wax..... 125 parts  
 Spermaceti ..... 160 parts  
 Glycerin ..... 280 parts  
 Boric acid..... 12 parts  
 Water ..... 500 parts

Dissolve the boric acid in the glycerin, and mix the solution with the oil, wax and spermaceti. Melt together with a very gentle heat, stirring constantly; when homogeneous, pour into a warm mortar, add the water and beat energetically until it forms a smooth mass. In case it becomes lumpy remelt, and again beat up.

**Circassian Cream.**

Purified lard..... 1 pound  
 Benzoin suet..... 1 pound  
 French rose pomade..... ½ pound  
 Otto of rose..... ¼ ounce  
 Mix by heat on a water bath.

**Camphor Cold Cream.**

White wax..... 2½ troy ounces  
 Spermaceti ..... 2½ troy ounces  
 Camphor ..... 1½ troy ounces  
 Oil of sweet almond..... 16½ fl. ounces  
 Distilled water..... 9 fl. ounces  
 Borax ..... 75 grains  
 Cumarin ..... 3¼ grains  
 Oil of rose ..... 22 minims  
 Oil of geranium, French.. 5 drops  
 Oil of ylang ylang..... 5 drops  
 Oil of bitter almond..... 2 drops  
 Oil of orris ..... 1 drop  
 Tincture of musk (1:10).. 10 drops  
 Tincture of civet ..... 5 drops

Prepare as directed in the general formula above, dissolving the camphor in the sweet oil.

**Cucumber Pomade.**

Benzoinated lard, 6 pounds; spermaceti, 2 pounds; spirit of cucumber, 1 pound. Melt the spermaceti with the lard, then keep it constantly in motion while it cools. Beat the grease in a mortar, gradually adding the essence of cucumber, continue to beat the whole until the spirit is evaporated and the pomade is beautifully white. Apply by rubbing a little over the skin at bed time.

**Cucumber Cream.**

White wax 1 av. ounce, spermaceti 1 ounce, benzoinated lard (quantity sufficient) 1 av. pound, 6 fair-sized cucumbers (those which have not become quite green appear to possess most flavor) peeled and cut in slices, borax sufficient. Melt the wax and spermaceti, add the lard and cool, add the cucumbers, stir well, then add 160 grains borax and mix intimately, allow to stand twelve hours, melt over water bath at slowly increased heat, and when melted strain through cheesecloth, place upon ice at once, and when solidified separate it from the water underneath and incorporate 160 grains more of borax. The borax develops more odor and tends to prevent decomposition of the juice while macerating, besides adding to the healing qualities of the ointment. Maceration should not exceed ten hours, nor should more heat than is absolutely necessary be employed during the manufacture.

**Carbolic Cream.**

Sodium borate..... 2 drams  
 Rose water..... 2 ounces  
 Dissolve, and mix with:

Olive oil..... 8 ounces  
 Carbolic acid..... 30 grains

If cotton seed oil is used, the proportion of borax may be increased so as to produce a creamy mixture.

**Glycerin Cream.**

Ceresin (pure)..... 2 ounces  
 Oil of almond (expressed) 5 ounces

When liquid, add:

Medicated soap..... 1 ounce  
 Rose water..... 2 ounces  
 Glycerin ..... 2 ounces  
 Oil of rose ..... 10 drops

Make into a bland ointment.

Dissolve ceresin in the oil; mix soap, rose water and glycerin, add the oil and the perfume.

**Glycerin Cold Cream.**

White wax.....	5 troy ounces
Spermaceti .....	5 troy ounces
Oil of sweet almond.....	43 fl. ounces
Glycerin .....	6½ fl. ounces
Distilled water.....	8 fl. ounces
Borax .....	150 grains
Cumarin .....	1½ grains
Oil of rose .....	30 grains
Oil of neroli .....	15 grains
Oil of bergamot .....	15 grains
Oil of ylang ylang .....	4 drops
Oil of orris .....	2 drops
Tincture of ambergris (1:10)	10 drops

If a rose color is desired, it may be obtained by dissolving in the oil used 6 grains of alkannin.

Prepare as directed in the general formula, mixing the glycerin with the water, before adding.

**Glycerin Cold Cream.**

Best olive oil (Lucca), or best oil of sweet almond	7 ounces
Spermaceti .....	2 ounces
Pure white wax.....	1 ounce

Melt in a porcelain dish on a water-bath, strain, if necessary, into another porcelain evaporating dish; stir until it begins to harden a little on the sides of the vessel; then add a warm solution of

Powdered borax..... ¼ ounce

In Glycerin .....

Mix. Add

Oil of rose..... 4 drops

Oil of bitter almond..... 4 drops

If water is desired in the cold cream, take

Powdered borax..... ¼ ounce

Glycerin .....

And add, when dissolved.

Distilled rose water..... 1½ ounces

Mix this solution with the fatty substance, and stir until cold.

During winter, ½ ounce of white wax instead of 1 ounce, will be sufficient.

**Glycerin and Cucumber Lotion.**

White glycerin soap.....	½ ounce
Powdered borax.....	2 drams
Cucumber ointment.....	2 ounces
Glycerin .....	1 ounce
Distilled water.....	32 ounces
Essence of jockey club.....	½ ounce

Cut the soap small and dissolve in 3 ounces boiling water. Place in a mortar along with the ointment, mix thoroughly, and add borax dissolved in 2 ounces of water. Mix the glycerin and perfume with the rest of the water and add the mixture, an ounce at a time, to the emulsion.

**Cream of Glycerin, With Roses.**

Oil of sweet almond.....	10 ounces
White wax.....	2¼ ounces
Glycerin .....	1½ ounces
Otto of rose.....	½ dram

Tincture of carmine, sufficient to color. Melt the wax and oil; add the glycerin. After thorough incorporation, remove from the fire and beat into cream with a spatula. Lastly, add the otto of rose and tincture of carmine.

**Honey and Almond Cream.**

Bitter almond.....	1 ounce
Yolk of egg.....	1 yolk
Honey .....	2 ounces
Expressed oil of almond..	2 ounces
Oil of bergamot .....	15 minims
Oil of lemon .....	12 minims
Oil of clove .....	12 minims

Bruise the almond, previously macerated in cold water, and deprived of its coat, and rub through a fine sieve; add the essential oils and the mixed yolk of egg, honey and almond, and beat all together until they are incorporated.

**Honey and Almond Cream (Whitcomb).**

Spermaceti .....	½ ounce
White wax.....	¼ ounce
White castile soap.....	¼ ounce
Bitter almond, blanched..	5 ounces
Alcohol .....	6 ounces
Oil of bitter almond.....	6 drops
Oil of bergamot .....	1 dram
Water, distilled.....	1 pint

Rub almonds with the water, then melt the spermaceti by water bath, mix the two, then add alcohol in which the oils have been previously dissolved, alcohol to be added slowly, strain through cheese cloth.

**Lanolin Toilet Cream.**

Lanolin .....	5 ounces
Oil of sweet almond.....	5 ounces
Precipitated sulphur.....	5 ounces
Zinc oxide.....	2½ ounces
Extract of violet.....	½ ounce
Extract of alkanet, enough to tint.	

Mix well in a warm mortar.

**Lanolin Toilet Cream.**

Lanolin .....	4 drams
Powdered soap.....	2 drams
Spirit of bergamot (1 to 16)	2 fl. drams
Rose water.....	4 fl. ounces

Dissolve the soap in the rose water, add the lanolin, mix well, add the perfume.

**Lanolin Cold Cream.**

White wax 2 ounces avoirdupois, spermaceti 2 ounces, oil of sweet almond 14 fluid ounces. Melt together and add lanolin 6 ounces avoirdupois; stir until nearly cold, adding gradually a solution of borax 75 grains in water 9 fluid ounces. Perfume with:

Oil of bergamot .....	15 minims
Oil of rose .....	15 minims
Oil of neroli .....	10 drops
Oil of ylang ylang .....	2 drops
Oil of orris .....	1 drop
Tincture of musk.....	5 drops
Cumarin .....	¼ grain
Vanillin .....	3 grains

The cumarin and vanillin should be dissolved in a little oil of sweet almond.

**Lanolin Cold Cream.**

White oil.....	8 ounces
Lanolin (anhydrous).....	2 ounces
Spermaceti .....	3 ounces
Water .....	6 ounces
Borax .....	1 dram
Perfume, as desired.	

Prepare as directed in general formula.

**Milk of Cucumbers.**

Bruise together in a mortar 100 sweet and 100 bitter almonds, and emulsionize with 1 litre of water. Then melt together 125 grams spermaceti, 125 grams white wax and 125 grams medicinal soap, and add, under constant stirring, 4 liters of water, which should be a little short of boiling when added. This wax emulsion is mixed with the almond emulsion, and 500 grams of 95 p. c. alcohol added thereto. Let stand for several hours, and then strain through flannel, by which latter process the greater portion of separated wax will be eliminated. Perfume to taste.

**Milk of Roses.**

Sweet almonds.....	8 ounces
White wax.....	$\frac{1}{2}$ ounce
Spermaceti .....	$\frac{1}{2}$ ounce
Powdered white soap.....	$\frac{1}{2}$ ounce
Alcohol .....	4 ounces
Otto of rose.....	1 dram
Distilled water.....	1 quart

Pour boiling water on the almonds and blanch them, dry and powder in a warm mortar, add the soap and wax and spermaceti (previously melted), mix well, and gradually add the water (heated nearly to boiling point). Strain with gentle pressure, and when nearly cold, add the otto dissolved in the spirit.

**Milk of Roses.**

Jordan almonds, blanched.....	1 pound
Bitter almonds .....	2 ounces
Well beaten, when very fine, add	
Spermaceti .....	1 ounce
White wax.....	1 ounce
Powdered castile soap, white .....	1 ounce
Previously well melted together.	

Incorporate them thoroughly with the almonds, and when perfectly smooth add by slow degrees, while beating,

Rose water (warm).....	5 pints
Mixed with	
Alcohol .....	20 ounces
Pass it through a cloth and add next day:	
Alcohol .....	$\frac{1}{2}$ ounce
Virgin otto of rose.....	1 scruple

**Pomade de Ninon.**

Oil of sweet almond.....	4 ounces
Washed lard .....	3 ounces
Juice of houseleek.....	3 ounces
Borax .....	$\frac{1}{2}$ dram
Mix as directed in general formula.	

**Prize Cosmetic.**

Honey, strained .....	2 ounces
White soft soap.....	1 ounce
Solution of potassa.....	1 fl. dram
Oil of sweet almond.....	28 fl. ounces
Oil of cloves.....	40 minims
Balsam peru.....	40 minims
Oil of bergamot .....	$1\frac{1}{2}$ fl. drams
Oil of bitter almond.....	$1\frac{1}{2}$ fl. drams

Rub the honey with the soft soap in a mortar; add the solution of potassa, and when thoroughly mixed gradually add the almond oil, with which the other oils have been previously mixed, stirring thoroughly until a homogeneous cream is formed.

**Cream of Roses.**

Spermaceti .....	4 drams
Oil of sweet almond.....	2 ounces
White wax.....	1 ounce
Glycerin .....	4 ounces

Melt together the spermaceti, almond oil, and wax, with a gentle heat and add the glycerin with constant stirring. Remove from the fire, perfume with attar of rose, and stir until cold.

**Salicylic Cold Cream.**

White wax.....	$3\frac{1}{2}$ ounces av.
Spermaceti .....	$3\frac{1}{2}$ ounces av.
Oil of almond, expressed.....	21 ounces av.
Distilled water.....	$3\frac{1}{2}$ ounces av.
Glycerin .....	$3\frac{1}{2}$ ounces av.
Salicylic acid.....	154 grains
Cumarin .....	1 grain
Oil of rose .....	10 drops
Oil of neroli .....	10 drops
Oil of bergamot .....	10 drops
Oil of wintergreen .....	5 drops
Oil of ylang ylang .....	1 drop
Tincture of musk (1.10)....	3 drops

Add the salicylic acid last, previously triturating it to a smooth paste with the glycerin.

Prepare as directed in U. S. P. process.

**Vaseline Cold Cream.**

Spermaceti .....	$4\frac{1}{2}$ troy ounces
White wax.....	$4\frac{1}{2}$ troy ounces
Oil of sweet almond.....	3 fl. ounces
Vaseline .....	12 ounces
Distilled water.....	$12\frac{1}{2}$ fl. ounces
Borax .....	288 grains
Cumarin .....	$1\frac{1}{2}$ grains
Oil of rose .....	28 grains
Oil of bergamot .....	28 grains
Oil of rose geranium .....	10 drops
Oil of rhodium .....	4 drops
Oil of orris .....	2 drops
Tincture of civet (1.10)....	10 drops

Prepare as directed in general formula.

**Vaseline Cold Cream.**

Vaseline .....	14 ounces
Paraffin .....	1 ounce
Lanolin .....	4 ounces
Water .....	6 ounces
Otto of rose.....	5 drops
Vanillin .....	4 grains
Alcohol .....	2 drams
Borax .....	1 dram
Prepare as directed in general formula.	

**Cold Cream, Greaseless (Massage Cream).**

Under this name certain toilet articles are marketed that in their external appearance seem to be cold creams, and are called thus, but in reality they lack the fat and grease upon which the action of cold creams depends. There are two distinct classes of preparations, those containing glycerin and a gum, like tragacanth, as their base, and those made principally of sodium stearate. To the latter small quantities of lanolin are sometimes added and nearly all of them contain a surplus of stearin.

**Massage Cream (Greaseless Cream With Glycerin).**

A typical formula for a cream under this title is the following:

Quince seed.....	1 dram
Boiling water.....	16 ounces
Borax .....	$\frac{1}{2}$ dram
Boric acid.....	$\frac{1}{2}$ dram
Glycerin .....	5 drams
Alcohol .....	$1\frac{1}{2}$ ounces
Otto of rose.....	10 drops
Extract of jasmine.....	6 drops

Wash the quince seed and put it in 12 ounces boiling water, stirring occasionally for two hours; strain, and add slowly the solution of the borax and boric acid in 4 ounces of water, then add the glycerin and the alcohol in which the perfumes are previously dissolved, Stir well.

**Massage Paste.**

Tragacanth .....	2 drams
Glycerin .....	1 ounce
Zinc oxide .....	2 drams
Rose water.....	12 ounces

Mix the tragacanth intimately with the rose water, let stand 24 hours, stirring often. Rub the zinc oxide in a mortar with the glycerin, add to the tragacanth mixture and stir.

**Massage Paste, Perfumed.**

To the paste made according to the preceding formula, add any perfume dissolved in one ounce of alcohol, stirring the mixture well after adding.



**Massage Paste.**

White castile soap, shaved	2 ounces
Glycerin	2 ounces
Water	3 ounces
Alcohol	1 ounce
Perfume sufficient.	

Dissolve the soap in the glycerin and water on a water bath. When nearly cold, add the perfume dissolved in the alcohol.

**Massage Cream, Casein.**

Casein, in powder	4 ounces
Glycerin	1 ounce
Perfume	1 dram
Cold cream, made of white oil,	5 ounces

Mix the casein with the glycerin and add the perfume. Then gradually work in the cold cream.

**Massage Balls.**

Although not greaseless, a formula for these preparations is here given.

Paraffin, menthol, oil of wintergreen, camphor, and oil of peppermint, of each a sufficient quantity. The paraffin is softened by putting it in warm water, without melting it. A quantity (about  $\frac{1}{2}$  to 1 ounce) is taken and one or two per cent. of the medication worked in. It is then shaped into a ball.

**Greaseless Cold Cream.**

Tragacanth	1 ounce
Rose water	2 pints
Glycerin	4 ounces
Boric acid	1 ounce
Tincture of tolu	$\frac{1}{2}$ ounce
Tincture of myrrh	$\frac{1}{2}$ ounce
Oil of lavender	10 drops
Oil of lemon	20 drops

Macerate the tragacanth in the rose water for 24 hours or longer, stirring often. When a homogeneous mass is obtained, strain, add the glycerin in which the boric acid has been dissolved, and finally add the tinctures with the perfumes. Stir well.

**Greaseless Cold Cream of Sodium Stearate.**

Stearic acid	2 $\frac{1}{2}$ ounces
Sodium carbonate (dry)	3 drams
Glycerin	3 drams
Water	24 ounces

Melt the stearic acid on a water bath, add the sodium carbonate and glycerin dissolved in 4 ounces of boiling water. Heat with constant stirring until effervescence ceases and add the remainder of the water gradually, beating to a foam in a warm mortar.

**Greaseless Cream, Witchhazel.**

Stearic acid	3 ounces
Sodium carbonate, dry	$\frac{1}{2}$ ounce
Glycerin	3 drams
Witchhazel water	24 ounces

Prepare as greaseless cold cream of sodium stearate.

**Greaseless Skin Cream.**

Stearic acid	3 ounces
Cacao butter	$\frac{1}{4}$ ounce
Sodium carbonate, dry	$\frac{1}{2}$ ounce
Borax	$\frac{1}{4}$ ounce
Glycerin	2 ounces
Oil of bitter almond	2 drops
Oil of rose	15 drops
Alcohol	2 ounces
Water	2 pints
Mucilage of tragacanth	8 ounces

Prepare like greaseless cold cream of sodium stearate, adding the cacao butter to the stearic acid, and the mucilage to the water.

**Greaseless Cream, Perfumed.**

Stearic acid	4 ounces
Sodium carbonate, dry	6 drams
Powdered borax	$\frac{1}{2}$ ounce
Glycerin	1 ounce
Water	8 ounces
Oil of rose	10 drops
Oil of heliotrope	10 drops
Alcohol	1 ounce

Prepare as in the preceding, adding the alcohol and perfumes last.

**Greaseless Cream.**

Stearic acid	3 ounces
Glycerin	3 ounces
Water	6 ounces
Potassium carbonate	$\frac{1}{2}$ ounce
Borax	$\frac{1}{4}$ drams
Powdered tragacanth	4 drams
Perfume sufficient.	

Place the glycerin on a water bath and heat to 150° F, add the tragacanth, previously rubbed up with a little alcohol. Add the stearic acid, heat till melted, then add the borax and potassium carbonate dissolved in the hot water. Stir till the mixture begins to set, then add the perfume.

**Greaseless Peroxide Cream.**

Stearic acid	3 ounces
Sodium carbonate, dry	3 drams
Anhydrous wool fat	4 drams
Glycerin	3 ounces
Borax	1 ounce
Solution of hydrogen peroxide	1 ounce
Water	1 pint
Perfume, sufficient.	

Prepare as directed in the preceding formula, adding the peroxide last.

**Greaseless Rolling Cream (Rolling Massage Cream).**

Stearic acid	4 ounces
Glycerin	4 ounces
Water	1 pint
Potassium carbonate	$\frac{1}{2}$ ounce
Boric acid	$\frac{1}{2}$ ounce
Casein, soluble	1 ounce
Powdered tragacanth	15 grains
Kaolin	3 ounces
Perfume sufficient.	
Carmine solution sufficient.	

Prepare as directed in the preceding formula, working in the kaolin before the mass sets.

**CAMPHOR ICES.**

Under this name are understood salves containing camphor, made of such consistency that they can be cast into molds and used in that form. The usual shape is that of a stick about the size of the index finger, but balls and cakes of all shapes are also employed. The official camphor cerate is a good salve of this class, although it is not stiff enough to be called camphor ice. Glycerin is often added to increase the emollient properties, while perfumes of various kinds are employed to produce the desired odor. These latter must be worked in when the mass begins to set.

**Camphor Ice.**

White wax	2 ounces
Spermaceti	16 ounces
Castor oil	4 ounces
Camphor, in powder	$\frac{1}{2}$ ounces
Oil of bitter almond	6 drops
Oil of lemon	10 drops
Oil of cloves	1 drop

Melt on a water bath the wax, spermaceti and castor oil, add the camphor, which dissolve in the melted mixture, taking care not to let the temperature rise higher than necessary. Stir, and when the mixture begins to set, add the perfume and run into suitable molds. This is a good general formula for camphor ice. If glycerin is added, the mass must be stirred till nearly hard, before casting into molds.

#### Camphor Ice, Carbolated.

Camphor ice..... 1 ounce  
Carbolic acid..... 2 to 10 drops

Use the camphor ice made as in the preceding and add, with the perfume, the carbolic acid to each ounce of salve. Five drops to the ounce gives about a 1% strength.

#### Camphor Ice.

Camphor, in powder..... 2 ounces  
White wax..... 4 ounces  
Benzoeated suet..... 2 ounces  
Glycerin .....  $\frac{1}{2}$  ounce  
Oil of lavender flowers ..  $\frac{1}{4}$  ounce  
Oil of bitter almond ..... 10 drops

Prepare as above.

#### Camphor Ice.

Wax ..... 16 ounces  
Spermaceti ..... 16 ounces  
Oil of sweet almond..... 16 fl. ounces  
Glycerin .....  $\frac{1}{2}$  fl. ounce  
Camphor ..... 3 ounces

Prepare as above.

#### Camphor Ice.

Spermaceti ..... 3 ounces  
White wax..... 4 ounces  
Oil of almond, expressed.. 8 ounces  
Camphor ..... 4 ounces  
Oil of cajuput ..... 40 drops  
Oil of lemon ..... 2 drams

Prepare as above.

#### Camphor Ice.

Pressed lard..... 24 ounces  
White wax..... 20 ounces  
Spermaceti ..... 10 ounces  
Camphor ..... 6 ounces

Melt the wax and spermaceti together by means of a water bath; then add the lard and camphor, and when the camphor is dissolved pour the mixture into suitable molds. Oil of bitter almond in the proportion of 1 fluid dram to each pound of camphor ice is a pleasant addition, and should be mixed in at the last moment when the mass is nearly ready to harden, and before it is cast into the molds.

#### Camphor Ice and Glycerin.

White wax.....  $\frac{7}{8}$  ounces  
Spermaceti .....  $\frac{7}{8}$  ounces  
Pulverized camphor..... 10 ounces  
Pure tallow..... 28 ounces  
Olive oil.....  $2\frac{1}{2}$  ounces  
Glycerin ..... 8 ounces

Melt the white wax, spermaceti and tallow together, while warm dissolve the camphor in the mixture. Finally, add the olive oil and glycerin. Stir, and pour into molds.

#### Camphor Ice with Glycerin.

Stearic acid..... 8 ounces  
Lard ..... 10 ounces  
White wax..... 5 ounces  
Spermaceti ..... 5 ounces  
Borax ..... 1 dram  
Glycerin ..... 1 ounce  
Camphor ..... 2 ounces

Prepare as directed in the first formula for camphor ice given above, dissolving the borax in the warmed glycerin.

#### Vaseline Camphor Ice.

White wax..... 2 ounces  
Spermaceti ..... 2 ounces  
Vaseline, white..... 5 ounces  
Camphor .....  $\frac{1}{2}$  ounce

Prepare as directed in the preceding.

#### Vaseline Camphor Ice.

White vaseline..... 8 ounces  
Hard paraffin..... 5 ounces  
Camphor ..... 2 ounces

Prepare as above.

#### Vaseline Camphor Ice.

Camphor (fine powder).... 1 ounce  
White wax, or paraffin.... 4 ounces  
Vaseline, white..... 10 ounces

Melt the wax and vaseline and while cooling but still liquid add the camphor.

#### Vaseline Camphor Ice.

White wax..... 5 ounces  
Paraffin ..... 2 ounces  
Vaseline ..... 8 ounces  
Camphor ..... 2 ounces  
Glycerin ..... 2 ounces

Melt the first three, add the camphor, and when dissolved, the glycerin. Mix thoroughly and pour into suitable molds.

## TOILET JELLIES.

Toilet preparations consisting mainly of gelatin, glycerin and water, are known under the name of "jellies". They are generally put up in collapsible tubes. Perfume of any desired kind may be added. According to the amount of gelatin used these jellies are more or less hard, but a medium hardness is to be preferred so that the jelly may easily be pressed out of the tube. Care should be taken to use the finest French gelatin, which should be perfectly clear and transparent.

#### Toilet Jelly.

Gelatin ..... 1 ounce  
Water ..... 5 ounces  
Glycerin ..... 10 ounces  
Stronger rose water..... 6 ounces

Macerate the gelatin in the water for 12 hours, put on a water bath, add the glycerin and rose water and mix. Perfume, dissolved in a little alcohol, may be incorporated when cooling. Put into tubes when the jelly begins to set.

This is a good typical formula for jellies. If other soluble ingredients are added such as boric acid, borax, etc., they should be dissolved in part of the water and added after mixing the dissolved gelatin and glycerin. If a perfectly clear jelly is required, it should be filtered, while hot, in a heated funnel.

#### Toilet Jelly, Perfumed.

Toilet jelly, preceding.... 8 ounces  
Oil of rose..... 2 drops  
Thymol ..... 1 grain  
Alcohol ..... 1 dram

Dissolve the perfumes in the alcohol and mix as directed in the preceding formula.

#### Arnica Jelly.

Starch ..... 280 grains  
Glycerin ..... 4 fl. ounces  
Water ..... 1 fl. ounce

Heat until the mass appears transparent. When nearly cold, add:

Tincture of arnica.....  $\frac{1}{2}$  dram  
Oil of rose..... 6 drops

**Arnica Jelly.**

Fluidextract of arnica.....	1 ounce
Glycerin .....	6-8 ounces
Gelatin .....	1 ounce
Water, sufficient.	

Cover the gelatin, contained in a suitable vessel with cold water; allow it to macerate several hours, or until soft and pliable; drain off the excess of water, dissolve by heat in the glycerin, the quantity of which must be varied with the season, using more in the winter than in hot weather. When dissolved add the arnica, perfume to taste, and color with liquid carmine.

**Arnica Jelly.**

Wheat starch.....	1 ounce av.
Distilled water.....	2 fl. ounces
Caustic potassa.....	9 grains
Glycerin .....	8 fl. ounces
Tincture of arnica.....	13 fl. drams

Dissolve the potassa in the water, add the starch, mix well, add the glycerin and heat until the starch is cooked. Then stir in the tincture of arnica, and put up while still warm in tin tubes.

**Borated Jelly.**

Gelatin .....	$\frac{1}{2}$ ounce
Water .....	5 ounces
Glycerite of borax.....	8 ounces
Stronger rose water.....	5 ounces

Prepare as directed in the first formula for toilet jelly given above.

**Borated Jelly.**

Gelatin .....	1 ounce
Water .....	10 ounces
Glycerin .....	8 ounces
Boric acid.....	1 ounce
Otto of rose.....	3 drops
Oil of lemon.....	5 drops

Prepare as directed in the first formula given above, dissolving the boric acid in the glycerin with the aid of heat.

**Carbolated Jelly.**

Gelatin .....	1 ounce
Glycerin .....	10 ounces
Water .....	16 ounces
Carbolic acid.....	1 dram

Prepare as above directed.

**Cucumber Jelly.**

Gelatin .....	1 ounce
Water .....	5 ounces
Glycerin .....	8 ounces
Cucumber juice, expressed and filtered .....	10 ounces

Prepare as above directed.

**Glycerin Jelly.**

Gelatin .....	4 drams
Glycerin .....	6 fl. ounces
Triple extract of rose.....	1 fl. ounce
Tincture of calendula.....	1 fl. dram
Water, quantity sufficient.	1 pint

Dissolve the gelatin in 6 ounces of water and add the glycerin with the aid of heat; add the tincture of calendula and the triple extract of rose, then add water to make 1 pint. Fill into the container while warm.

**Glycerin Jelly, Without Gelatin (Opaque Glycerin Jelly).**

Mix in a mortar 4 ounces of white soft soap with 6 ounces of glycerin; then mix 4 drams of oil of thyme with 4 pounds almond oil, and add this gradually to the glycerin and soap, taking care to incorporate each portion thoroughly before adding the next.

**Crystal Glycerin Jelly.**

Gelatin .....	$2\frac{1}{2}$ parts
Glucose .....	10 parts
Glycerin .....	60 parts
Water .....	$27\frac{1}{2}$ parts

Mix the glycerin and water, and then dissolve in the mixture first the glucose and then the gelatin by the aid of a gentle heat; perfume with oil of rose, and place in containers while still warm.

**Glycerin Jelly (Solid).**

French gelatin.....	120 grains
Glycerin .....	$\frac{1}{2}$ ounces
Water .....	$\frac{1}{2}$ ounce
Otto of rose.....	1 drop

Prepare as above directed.

**Glycerin Jelly, Transparent.**

Take 1 ounce transparent soap, dissolve in 4 ounces water and 4 ounces glycerin by the aid of heat. While still warm, add 20 ounces glycerin, and when nearly cold, perfume and pour into glass jars. This will make a transparent jelly of a pale amber color.

**Rose Jelly.**

Flaxseed jelly.....	1 pint
Glycerin .....	4 ounces
Salicylic acid.....	5 grains
Oil rose geranium, enough to perfume.	

Mix.

**Jelly of Roses.**

Finest Russian isinglass..	$\frac{1}{4}$ ounce
Glycerin .....	2 ounces
Rose water.....	6 ounces
Oil of roses.....	10 drops

Prepare as above directed.

**Salicylated Glycerin Jelly.**

Gelatin .....	140 grains
Rose water.....	6 ounces
White of egg.....	$\frac{3}{4}$ ounce
Glycerin .....	6 ounces
Salicylic acid.....	12 grains

Soak the gelatin in the rose water for a few minutes, and dissolve by aid of a water bath; cool and add the white of egg; mix thoroughly and heat until completely coagulated, then add the glycerin and salicylic acid; mix well and filter through a hot water funnel while warm.

**Witchhazel Jelly.**

Gelatin .....	1 ounce
Water .....	5 ounces
Glycerin .....	8 ounces
Witchhazel water.....	10 ounces

Prepare as above directed.

**Witchhazel and Cucumber Jelly.**

Gelatin .....	1 ounce
Water .....	4 ounces
Glycerin .....	8 ounces
Cucumber juice.....	6 ounces
Witchhazel water.....	6 ounces

Prepare as above directed.

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## COSMETICS CONTAINING NO FAT.

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**Almond Lotion.**

Sweet almonds.....	1 ounce
Alcohol .....	$1\frac{1}{2}$ ounces
Glycerin .....	4 fl. ounces
Boric acid.....	32 grains
Tragacanth .....	40 grains
Rose water, quantity sufficient.	



Mix the glycerin with 11 fluid ounces of rose water and make a mucilage with the tragacanth. Blanch the almonds and emulsify with the glycerin, rose water and tragacanth mixture in three portions of five ounces each, straining after each operation. Add the alcohol containing the boric acid in solution and make the product up to one pint.

#### Balm for the Skin.

Gum tragacanth..... ½ ounce  
Soft water..... 2 pints  
Mix and let stand for two days; beat up well, strain and add:  
Powdered alum..... ½ ounce  
Boric acid..... 1 ounce  
Glycerin..... 4 ounces  
Alcohol..... 6 ounces  
Water..... 1 pint  
Or enough to make the solution like a cream.

Perfume with any favorite extract.

#### Bloom of Orient.

Bismuth oxychloride..... ¼ ounce  
Water..... 1½ pints  
Rose water..... ½ pint  
Oil of neroli..... 5 drops  
Spirit of sandalwood..... ¼ dram  
Triturate the mixture very thoroughly.

#### Bloom of Roses.

Pure carmine..... ½ ounce  
Essence of white rose..... 3 fl. ounces  
Solution of potassa, B. P. 6 fl. drams  
Water, enough to make... 20 fl. ounces  
Set aside for a few days, agitating occasionally, finally filter.

#### Benzoated Glycerin.

Benzoic acid..... 20 grains  
Tincture of tonka..... 2 drams  
Soft soap..... 1 dram  
Glycerin..... 1 ounce  
Rose water, enough to make 4 ounces  
Dissolve the acid in the tincture and add the glycerin. Dissolve the soap in the rose water and mix.

#### Borated Glycerin.

Glycerite of borax..... 1 ounce  
Glycerin..... 2 ounces  
Rose water, enough to make 8 ounces

Mix.

#### Complexion Beautifier.

Diluted nitric acid..... 2 fl. drams  
Alcohol..... 3 ounces  
Extract of white rose..... ½ fl. ounce  
Oil of neroli..... 10 minims  
Mix and add:  
Solution of peroxide of hydrogen..... 2 fl. ounces  
Glycerin..... 3 ounces  
Tincture of cochineal..... 1 fl. dram  
Water, enough to make... 40 ounces

Let the mixture stand three weeks and filter. Wet the corner of a napkin with the lotion, and apply each time after washing, then dry.

#### Complexion Beautifier.

Ammonia water..... 2 ounces  
Bay rum..... 2 ounces  
Rose water..... 2 ounces  
Borax..... 2 ounces  
Glycerin..... 1 ounce  
Distilled water..... 16 ounces  
Spirit of juniper compound..... 16 ounces

Mix. If the face be washed with a soft rag dipped in this lotion it will remove tan, freckles, pimples, black-heads, and many other similar face disfigurements.

#### Clear Complexion Water.

Magnesium sulphate..... 60 grains  
Rose water..... 12 ounces  
Orange flower water..... 4 ounces  
Dissolve the magnesium sulphate in the waters and filter.

#### Clear Complexion Water.

Sodium borate..... 1 dram  
Boric acid..... 20 grains  
Any perfumed toilet water 1 pint  
Mix.

#### Clear Complexion Water.

Mercury bichloride..... 4 grains  
Citric acid..... 1 dram  
Rose water..... 1 pint  
Dissolve the bichloride and the acid in the rose water.

#### Cosmetic Water.

Dilute hydrochloric acid... 1 dram  
Dilute nitric acid..... 1 dram  
Rose water..... 1 pint  
For application to pimples, liver spots, etc.

#### Cosmetic Water.

Alcohol..... 1 ounce  
Strong vinegar..... 1 ounce  
Gum benzoin..... 10 grains  
Dissolve the benzoin in the alcohol and add the vinegar.

#### Beauty Water.

Mercury bichloride..... 12 grains  
Camphor..... 15 grains  
Zinc sulphate..... 1 dram  
Lead acetate..... 1 dram  
Alcohol..... ½ ounce  
Yolk of one egg,  
make 8 ounces  
Dissolve the bichloride and camphor in the alcohol, mix the yolk with 6 ounces of rose water, dissolve the salts each in ½ ounce of rose water, mix all, shake and add rose water to make 8 ounces.

#### Eau des Fleurs.

Oil of lavender..... ½ ounce  
Oil of bergamot..... ½ ounce  
Oil of neroli..... 2 drams  
Oil of orange..... 2 drams  
Oil of cloves..... 1 dram  
Musk..... 4 grains  
Alcohol..... 4 pints  
Water..... 4 pints  
Mix; after a week filter through talcum. A pleasant cooling application for the skin.

#### Benzoin Skin Lotion.

Alum..... 1 dram  
Benzoic acid..... 10 grains  
Tincture of benzoin..... 1 ounce  
Water..... 10 ounces  
Dissolve the alum in the water, add the acid and tincture, shake well, filter through talcum.

#### Face Bleach.

Corrosive sublimate..... 8 grains  
Tincture of benzoin..... 1 dram  
Water, enough to make... 8 ounces  
Apply only occasionally, as there is danger in its daily use.

**Face Bleach.**

Betanaphthol .....	5 grains
Glycerin .....	3 ounces
Cologne .....	3 ounces

Dissolve the betanaphthol in the cologne and add the glycerin.

**Glycerin Cream.**

Bitter almonds.....	1 ounce
Sweet almonds.....	3 ounces

Blanch and beat into a paste with 3 drams almond oil and 2 drams powdered curd soap, gradually add 12 ounces of water, and strain. Then mix the following:

Otto of rose.....	8 drops
Oil of neroli.....	3 drops
Rectified spirit.....	1½ ounces
Glycerin .....	2 ounces
Water .....	5 ounces

Mix with the strained emulsion, and make up to a pint with water. Quince mucilage prevents separation in such emulsions as the above.

**Copland's Aqua Cosmetica.**

Emulsion of bitter almond.....	3¼ fl. ounces
Rose water,	
Orange flower water.....	¼ pint
Borax .....	1 dram
Tincture of benzoin.....	2 fl. drams

Mix.

**Madame Dornier's Liquid Cosmetic.**

A liquid intended to be employed before, during, and after massage, and which gives the skin great freshness and suppleness. Four parts each of alum and tan bark, and 8 parts each of anise, thyme, sage, rosemary, hyssop, lavender, absinthium, peppermint and camphor. To be infused 15 days in 1,000 parts of 45 per cent alcohol, and then filtered.

**Thespian Liquid Cosmetic.**

Tragacanth .....	25 grains
Glycerin .....	1 fl. ounce
Alcohol .....	½ fl. ounce
Water .....	6½ fl. ounces
Boric acid.....	40 grains
Spirit of lavender.....	1 fl. dram
Spirit of bergamot.....	1 fl. dram

Macerate the tragacanth in the water for 24 hours, stirring often, strain, add the boric acid dissolved in the glycerin and the alcohol with the perfumes. Mix.

**Toilet Cream.**

A somewhat stiffer preparation than the foregoing has been offered to the trade:

Tragacanth .....	1 dram
Triple extract of rose.....	6 drops
Glycerin .....	2 fl. ounces
Water .....	4 fl. ounces
Boric acid.....	60 grains

Prepare as in the preceding.

**Cosmetic Glycerin Paste, Junonia.**

Tragacanth, powdered... ..	½ ounce
Rose water.....	2 ounces
Glycerin .....	5 ounces

Mix and digest on the water bath for 1 hour, after which add to the paste thus formed:

Tincture of benzoin.....	½ ounce
Oil of orange flowers.....	5 drops

Mix well.

**Glycerin of Roses, or Fragrant Cream.**

Dissolve 24 grains of boric acid in 1 pint of water, macerate with 20 ounces flaxseed for three days, strain, and add 1 pint glycerin, 1½ pints, cologne spirit, 1½ ounces carbolic acid, 2 ounces cologne.

**Glycerin of Roses, or Fragrant Cream.**

Dissolve 4 grains of boric acid in 4 ounces of rose water, macerate in this solution 1½ drams of cydonium for three hours, strain and press through cloth, add 2 ounces glycerin, 3 ounces alcohol, 2 drams cologne water and sufficient rose water to make 1 pint. Finally add 10 grains carbolic acid and shake well.

**Glycerin of Roses, or Fragrant Cream.**

Dissolve 4 grains boracic acid in 8 ounces water, bruise 1½ drams quince seed and macerate in the solution for three hours; strain and press through cloth, add 2 ounces glycerin, 10 grains carbolic acid, 2 ounces glycerite of starch, and mix thoroughly. Then mix 2 fluid drams of cologne water, 20 drops oil of lavender, and 3 fluid ounces of alcohol; add to the mucilage, and again mix thoroughly. Finally make up with water to 1 pint.

**Lotion for Inflamed or Rough Skin.**

Boracic acid.....	1 dram
Distilled witchhazel.....	2 ounces
Rose water.....	2 ounces

Use externally.

**Lotion for Itching of the Skin.**

Alum .....	1 ounce
Borax .....	1 ounce

Add 1 pint of hot water to these, and sponge the mixture over the skin.

**"Kalydore."**

Emulsion of almond.....	6 ounces
Corrosive sublimate.....	5 grains
Rose water.....	2 ounces

Rub the corrosive sublimate with the water until it is dissolved; add the emulsion; mix them.

**Lait Virginal.**

Its composition varies, but the following is one of the most common formulas:

Tincture of benzoin.....	2 fl. drams
Rose water.....	8 fl. ounces

Mix.

It is essential to add the water very gradually to the tincture and with constant stirring to prevent precipitation.

**Skin Lotion.**

Glycerin .....	1 ounce
Aromatic vinegar, quantity	
sufficient .....	16 ounces
Tincture cochineal, quantity sufficient.	

Mix.

**Borax Lotion.**

Powdered borax.....	1 dram
Glycerin .....	1 ounce
Bay rum, quantity suffi-	
cient .....	4 ounces

Mix and filter.

**Camphorated Glycerin Lotion.**

Spirit of camphor.....	1 ounce
Glycerin .....	3 ounces

Mix well.

**Cooling Lotion.**

Alcohol .....	1 ounce
Potassium nitrate.....	4 drams
Acetic acid.....	4 drams
Camphor water.....	20 ounces

Mix and filter.

**Face Lotion.**

Boric acid..... 1 dram  
Distilled witchhazel ..... 4 ounces

Apply to the skin with a piece of old muslin, or with a piece of absorbent cotton.

**Face Lotion.**

Corrosive sublimate..... 8 grains  
Glycerin ..... 2 ounces  
Distilled witchhazel..... 2 ounces

Apply to the skin with a sponge, or a piece of soft, old muslin. This is an excellent lotion for greasy, shiny and rough complexions.

**Glycerin Balm.**

Zinc oxide.....2½ ounces  
Glycerin ..... 4 ounces  
Oil of rose ..... 20 drops  
Oil of neroli ..... 15 drops  
Oil of bitter almond..... 5 drops  
Oil of bergamot ..... 10 drops  
Alcohol ..... ½ ounce  
Rose water..... 2 pints

Mix the zinc oxide in a spacious mortar with the glycerin, add gradually the alcohol in which the oils have been dissolved, then add the rose water. Put a "shake label" on each bottle.

**Glycerin Lotion.**

Glycerin ..... 6 ounces  
Rose water..... 2 ounces  
Zinc oxide..... 1 dram  
Tincture of benzoïn..... ½ dram

Mix the zinc oxide in a mortar with the glycerin, add the tincture, and finally the rose water in small portions.

**Glycerin Lotion.**

Mucilage of flaxseed..... 8 fl. ounces  
Glycerin ..... 8 fl. ounces  
Alcohol ..... 2 fl. ounces  
Essence of rose..... ½ fl. ounce  
Borax ..... 2 drams  
Rose water, sufficient to  
make ..... 32 fl. ounces

Mix the mucilage and glycerin, add the alcohol and essence, finally the rose water in which the borax has been dissolved.

**Glycerin Lotion.**

Prepared by simmering 1 dram of quince seed in ½ pint boiling water for ten minutes, straining the mucilage and mixing 1 part with 1 part of glycerin, and 6 parts of orange flower or rose water. A little borax may be added, if desirable.

**Glycerin Lotion with Bay Rum.**

Glycerin ..... 4 ounces  
Bay rum..... 4 ounces  
Mucilage of quince seed  
or flaxseed..... 8 ounces

Mix.

**Glycerin and Rose Water.**

Glycerin ..... 4 ounces  
Orange flower water..... 1 ounce  
Rose water..... 5 ounces  
Distilled water..... 5 ounces

Mix.

This may be colored with liquid carmine, 1 to 4 drams.

**Lehmann's Cosmetic Lotion.**

Oil of camphor, 100 minims; powdered gum arabic, 100 grains; rose water, 3¼ fluid ounces; orange flower water, 2 fluid ounces; make an emulsion of the foregoing and add ammonium chloride, 20 grains; corrosive sublimate, 5 grains; 50 minims acetate of lead solution, 60 minims spirit of nitrous ether, 35 minims tincture of benzoïn.

**May Dew Lotion.**

Distilled water..... 5 ounces  
Powdered borax..... 1 dram  
Glycerin ..... ½ ounce  
Sodium sulphite..... 2 drams  
Rose water, enough to  
make ..... 10 ounces

Mix.

**Lotion for Chapped Nipples.**

Balsam of peru, 2 grams; tincture of arnica, 2 grams; oil of sweet almond, 30 grams; lime water, 15 grams. Mix. To be applied to the nipple on the removal of the baby from the breast.

**Lotion for Pimples.**

Zinc sulphocarbonate..... 2 drams  
Orange flower water..... 3 drams  
Alcohol ..... ½ ounce  
Rose water..... 4 fl. ounces

Use every night before retiring.

**Pimple Lotion.**

Carbolic acid..... 1 dram  
Borax ..... 4 drams  
Glycerin ..... 2 fl. ounces  
Tannin ..... 2 fl. drams  
Alcohol ..... 3 fl. ounces  
Rose water..... 10 fl. ounces

Mix and dissolve. Apply night and morning.

**Pimple Lotion.**

Alum ..... 1 ounce  
Sodium chloride..... 1 ounce  
Sublimed sulphur..... 1 ounce  
Sugar ..... 2 drams  
Spermaceti ..... 2 drams  
Elder flower water..... 3 ounces  
Distilled water..... 3 ounces  
Brandy ..... 10 ounces

Reduce the solids to a fine powder and rub up with the liquids previously mixed.

**Skin Lotion.**

Glycerin ..... 4 ounces  
Cologne ..... 2 ounces  
Borax ..... 2 ounces  
Alcohol ..... 2 ounces  
Camphor water..... 20 ounces

Mix.

**Lotion to Prevent Chapping of the Skin.**

Oil of rose ..... 15 drops  
Oil of cajuput ..... 20 drops  
Glycerin ..... 1 fl. ounce  
Bay rum..... 3 fl. ounces

To be used on the hands every night before going to bed, and in cold weather to be applied before going out in the open air, the hands being first washed and dried.

**Sulphur Skin Lotion.**

Zinc sulphocarbonate..... 20 grains  
Zinc oxide..... 2 drams  
Sulphur precipitate..... 1 dram  
Cologne water..... 6 drams  
Glycerin ..... 6 drams  
Rose water, enough to  
make ..... 6 ounces

Rub the solids with the glycerin, add the cologne water and finally the rose water, constantly stirring.

**Summer Lotion, Emollient.**

Glycerin ..... 1 ounce  
Honey ..... 1 ounce  
Lavender water..... 3 drams  
Orange flower water..... 1 ounce  
Elder flower water..... 4 ounces  
Otto of rose..... 2 drops  
Alcohol ..... ½ ounce

Mix and filter.



**Menthol Cream.**

Tragacanth .....	1 dram
Warm water .....	12 ounces
Glycerin .....	3 drams
Alcohol .....	4 drams
Menthol .....	10 grains

This cream is applied as a cooling lotion, having first been diluted with some aromatic water.

Mix tragacanth and water, let stand 24 hours, stirring often, add glycerin and the alcohol with the menthol. Mix well.

**Oriental Cosmetic.**

Powdered tragacanth.....	1 dram
Glycerin .....	6 ounces
Mix and place in a water bath for 1 hour.	
Then add:	
Borax .....	1 dram
Dissolved in	
Rose water.....	5 drams
When partially cool, add	
Oil of rose.....	1 drop

**Lotion for Sunburn.**

Citric acid.....	2 drams
Pure iron sulphate.....	18 grains
Camphor .....	2 grains
Elder flower water.....	3 ounces

Reduce the solids to a fine powder and rub with the elder flower water.

**Toilet Cream.**

Quince seed.....	2 ounces
Rose water.....	4 pints
Glycerin .....	2 pints
Tincture of benzoin.....	2 ounces

Macerate the quince seed in the rose water for 24 hours, strain, and add the glycerin and tincture of benzoin.

**Toilet Cream.**

Dissolve 60 grains of salicylic acid in 2 pints of soft water, add 1½ ounces of best tragacanth, 1 pint of glycerin and 5 pints of water, placing the whole in a 2-gallon jar. Cover and let remain a few days, stirring occasionally and working well until a mucilage is formed free from lumps. Finally add ½ ounce of any good handkerchief extract, and squeeze two or three times through muslin until smooth.

**Winter Cream.**

Sweet almonds.....	1 ounce
Bitter almonds.....	2 drams
Quince mucilage.....	6 ounces
Glycerin .....	1½ ounces
Carbolic acid.....	1 dram
Essence bouquet.....	3 drams
Water, enough to make...	16 ounces

Blanch the almonds, bruise, and emulsify with 8 ounces of water. To this add the other ingredients in the above order, dissolving the acid in the essence bouquet.

**Transparent Cosmetic.**

Transparent soap.....	8 ounces
Glycerin .....	½ ounce
Water .....	1 ounce
Mucilage of acacia.....	½ ounce
Otto of rose.....	5 drops
Oil of cinnamon .....	10 drops
Oil of lemon .....	20 drops

Cut the soap (which should be one of the common soft brands) into shavings, and heat on a water bath, along with the water, glycerin and mucilage. Stir constantly, adding water if, on testing a little of the cooled mass, it is found to be too hard. Then add the perfumes, mixed with a dram of spirit, and cast into sticks.

**PREPARATIONS FOR THE HAIR.**

The care of the hair is as old as history, antedating our modern civilization, for even barbarian peoples and tribes devoted much time and energy to dressing their hair. Beautiful hair counts as one of the leading points in judging the beauty of men and more so of women, and will always remain so. For its care and preservation innumerable methods and remedies have been devised, that naturally differ greatly from each other according to the particular use and purpose for which they are intended. Diseases of the hair are generally not considered sufficiently serious to require the attention of a physician. A variety of formulas covering almost every possible emergency are given in the following pages, and the retailer should have no difficulty in selecting and preparing a dressing or tonic therefrom that will suit his customers.

**Baldness.**

Salicylic acid.....	1 dram
Resorcin .....	2 drams
Lanolin .....	6 drams
Benzoated lard.....	2 drams

Make into an ointment and apply at night to the scalp.

**Baldness.**

Fluidextract of jaborandi.	1 ounce
Tincture of cantharides...	½ ounce
Soap liniment.....	1½ ounces

Mix. Rub on the scalp once daily.

**Baldness.**

Tincture of nux vomica...	4 drams
Tincture of cantharides ..	2½ drams
Lanolin .....	2½ drams
Acetic acid.....	4 drams
Rose water.....	6 ounces

Mix, and use as a lotion.

**Baldness.**

Fluidextract of pilocarpus.	1 ounce
Soap liniment.....	3 ounces

Rub thoroughly into the scalp night and morning.

**Baldness.**

1. The scalp should be lathered well with a strong tar soap for ten minutes. 2. This lather is to be removed with lukewarm water, followed by colder water in abundance; then the scalp is to be dried. 3. A solution of mercury bichloride, 1 to 900, the menstruum being equal parts of water, glycerin, and cologne or alcohol, is to be rubbed on. 4. The scalp is then rubbed dry with a solution containing betanaphthol, 1 part, and absolute alcohol, 200 parts. 5. The final step in the process is an anointing of the scalp with an unguent containing two parts of salicylic acid, three parts of tincture of benzoin, and 100 parts of neat's-foot oil. This treatment should be persisted in for a period of six weeks or longer.

**Baldness.**

Tincture of capsicum.....	2 drams
Water of ammonia.....	1 ounce
Pilocarpine hydrochloride.	5 grains
Cologne .....	3 ounces

Use on the scalp twice a day.

**Baldness.**

Ichthyol .....	1 dram
Lanolin .....	2 drams
Lard, benzoated.....	6 drams

Mix well and apply at night.

**Baldness.**

Resorcin ..... ½ ounce  
 Glycerin,  
 Bay rum, of each..... 4 fl. ounces  
 Apply at night. If the hair is very dry  
 apply an oil in the morning.

**Baldness.**

Ointment of 10 per cent  
 mercury oleate..... ½ ounce  
 Lanolin, or prepared suet. ½ ounce  
 Rub well into the scalp.

**Baldness.**

Ichthyol ..... 2 drams  
 Oleate of mercury, 10 per  
 cent ..... 4 drams  
 Lanolin ..... 4 drams  
 Benzoated lard..... 6 drams  
 Mix well, and massage the scalp at night.

**Baldness.**

Alcohol (80 per cent).... 20 drams  
 Camphor ..... 1 dram  
 Rum ..... 2 ounces  
 Tincture of cantharides... 4 drams  
 Glycerin ..... 4 drams  
 Essence of santal ..... 5 drops  
 Essence of wintergreen ... 5 drops  
 Essence of laurel roses... 5 drops  
 Pilocarpine muriate..... 8 grains

This mixture is gently rubbed on the  
 scalp once a day.

**Bald Patches.**

"Barber's itch" frequently produces bald  
 patches on the face where the beard and  
 mustache ought to grow. The following has  
 been astonishing in its efficacy:

Chloral hydrate..... 2 ounces  
 Tincture of cantharides... 2 ounces  
 Distilled water, enough to  
 make ..... 8 ounces

Lightly paint on the affected parts twice  
 a day.

**BANDOLINES.****Bandoline.**

Flaxseed ..... 1 ounce  
 Water ..... 1½ pints  
 Perfume, a sufficiency.

Boil the flaxseed in the water for 5 min-  
 utes, strain and add the perfume.

**American Bandoline.**

Quince seed..... 2 drams  
 Glycerin ..... 4 drams  
 Rose water..... 4 ounces  
 Distilled water..... 3 ounces  
 Alcohol ..... 1 ounce

Macerate the seeds in the water for 24  
 hours, and strain out the mucilage with  
 gentle pressure. Add the glycerin and al-  
 cohol.

**Bandoline.**

Iceland moss..... 1 ounce  
 Water ..... 1 pint  
 Oil of rose..... 5 drops  
 Glycerin ..... 2 ounces

Boil the moss in the water for 5 minutes,  
 strain, add the glycerin and oil.

**Bandoline.**

Gelatin ..... 1 ounce  
 Distilled water..... 2 pints  
 Glycerin ..... 10 ounces  
 Otto of rose..... 5 drops  
 Oil of neroli..... 5 drops  
 Essence of musk..... 1 dram

Keep the gelatin in the water for 24 hours,  
 heat gently till dissolved, add the glycerin,  
 mix well, add the perfume, mix and strain.

**Rose Bandoline.**

Gum tragacanth..... 2 ounces  
 Rose water..... 6 pints  
 Orange flower water..... 2 pints  
 Salicylic acid..... 16 grains  
 Alcohol ..... 2 drams  
 Oil of rose..... 1 dram  
 Extract of musk..... 5 drops  
 Oil of wintergreen..... 5 drops

Shade a delicate pink with carmine solu-  
 tion.

Let the tragacanth stand 24 hours in the  
 water, and strain through muslin; add the  
 salicylic acid dissolved in the alcohol, and  
 the remaining perfumes with thorough ad-  
 mixture.

**Bandoline.**

Gum tragacanth..... 1½ drams  
 Water, distilled..... 7 ounces  
 Proof spirit..... 3 ounces  
 Otto of rose..... 10 drops

Macerate the gum in the water until com-  
 pletely dissolved, strain and add the spirit  
 with the otto previously dissolved in it. If  
 a rose-colored bandoline be required, a few  
 drops of cochineal color should be added to  
 the spirit.

**Bandoline.**

Quince seed..... 2 drams  
 Linseed ..... 1 ounce  
 Water ..... 1½ pints  
 Alcohol ..... 1 ounce  
 Oil of bitter almond..... 5 drops

Boil the seeds in the water for 10 minutes,  
 strain; when nearly cool add the alcohol and  
 the oil.

**Bandoline.**

Powdered tragacanth..... 1 ounce  
 Alcohol ..... 2 ounces  
 Oil of neroli ..... 10 drops  
 Oil of rose ..... 10 drops  
 Boiling water..... 24 ounces

Rub the tragacanth with the alcohol in a  
 large mortar, add the boiling water slowly,  
 stirring continuously; when nearly cold, add  
 the oils.

**Bandoline.**

Isinglass ..... 1 ounce  
 Water ..... 1 pint  
 Alcohol ..... 2 ounces  
 Oil of almond..... 10 drops

Dissolve the isinglass in the water with  
 heat, when nearly cool, add the alcohol and  
 the oil.

**BAY RUMS.****Bay Rum.**

Alcohol ..... 8 ounces  
 Oil of bay ..... 40 drops  
 Oil of mace ..... 1 grain  
 Oil of orange ..... 20 drops  
 Jamaica rum..... 1 ounce  
 Water, enough to make... 16 ounces

Digest two or three weeks, and filter  
 through magnesia.

**Bay Rum.**

Oil of bayberry tree..... 1 fl. ounce  
 Jamaica rum..... 1 pint  
 Strong alcohol..... 4 pints  
 Water ..... 3 pints

Mix the rum, alcohol and water, then add  
 the oil, mix, and filter.

**Bay Rum.**

Bay leaves.....	2 ounces
Cardamoms .....	$\frac{1}{2}$ ounce
Cassia .....	1 dram
Cloves .....	1 dram
Rum .....	1 pint

Macerate the crushed drugs for a week and filter. A finer produce is obtained by distilling.

**Bay Rum (Thompson's).**

Distilled oil bay (Myrcia acris) .....	1 fl. ounce
Acetic ether.....	1 fl. ounce
Oil of pimenta.....	$\frac{1}{2}$ fl. ounce
Alcohol .....	$1\frac{1}{2}$ gallons
Water .....	$1\frac{1}{2}$ gallons

Add 1 ounce pure borax; this gives the desired color. First dissolve it in  $\frac{1}{2}$  gallon of the water, then filter.

**Bay Rum "After Shave."**

Bay rum.....	3 pints
Glycerin .....	$\frac{1}{2}$ pint
Extract of violet.....	$\frac{1}{2}$ ounce
Rose water.....	$\frac{1}{2}$ pint

Mix and filter, if necessary.

**Bay Rum.**

Oil of bay.....	4 fl. drams
Jamaica rum.....	8 fl. ounces
Water .....	$4\frac{1}{2}$ pints
Stronger alcohol.....	3 pints

Filter through magnesia and charcoal, if necessary.

**Bay Rum.**

Oil of bay .....	2 drams
Oil of pimenta .....	$\frac{3}{4}$ dram
Acetic ether.....	3 drams
Alcohol .....	3 pints
Water .....	2 pints

Mix and filter through talcum.

**Color for Bay Rum.**

Bay rum is colored either light yellow or green. Yellow color is produced by adding a solution of caramel. Green color is best produced by adding crushed bay leaves and macerating. A tincture of bay leaves (1 ounce to 10 of alcohol) may also be used.

**Bay Rum.**

Oil of bay .....	1 dram
Oil of orange .....	1 dram
Oil of pimenta .....	1 dram
Alcohol .....	6 pints
Water .....	5 pints

Mix and filter.

**Bay Rum.**

Oil of bay .....	2 drams
Oil of pimenta .....	20 drops
Magnesium carbonate.....	$\frac{1}{2}$ ounce
Alcohol .....	2 pints
Water .....	2 pints
Tincture of bay leaves, sufficient to color.	

Mix them, shake and filter.

**Bay Rum.**

Jamaica rum.....	16 ounces
Alcohol .....	64 ounces
Water .....	48 ounces

Mix and add:

Oil of bay.....	1 ounce
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Filter.

**Bay Rum.**

Rum .....	1 gallon
Bay oil.....	1 ounce
Acetic acid.....	$\frac{1}{2}$ ounce
Alcohol .....	8 ounces

Caramel, sufficient.

Dissolve the oils in the alcohol, and add to the rum; color with caramel, and filter.

**Bay Rum—Domestic.**

Oil of bay.....	5 fl. ounces
Alcohol .....	$6\frac{1}{4}$ gallons
Water .....	$3\frac{3}{4}$ gallons
Bay leaves.....	5 ounces

Macerate 14 days; filter.

**Bay Rum.**

Oil of bay .....	6 drams
Oil of pimenta .....	1 dram
Acetic ether.....	1 ounce
Powdered castile soap.....	4 drams
Alcohol .....	12 pints
Water .....	10 pints

Mix. Allow to stand seven days; then filter.

**Bay Rum (St. Thomas).**

Oil of bay.....	$\frac{1}{2}$ ounce
Magnesium carbonate.....	1 ounce
New England rum.....	1 pint
Alcohol .....	2 pints
Water .....	2 pints
Tincture of bay leaves, sufficient to color.	

Rub the oil with the carbonate of magnesium; then gradually add the water, alcohol and New England rum. Filter through paper, and add sufficient of the tincture to give it a light green tint.

**Barbers' Bay Rum.**

Oil of bay .....	6 fl. drams
Oil of pimenta .....	1 fl. dram
Oil of orange peel .....	1 fl. dram
Tincture of orange peel,	
U. S.....	$\frac{1}{2}$ ounce
White castile soap.....	4 drams
Cologne spirit.....	12 pints
Water .....	9 pints

Dissolve the castile soap in a pint of the water by the aid of heat; dissolve the oils in the cologne spirit, gradually add the solution of soap, tincture of orange and water, let stand and filter.

**Bay Rum Essence.**

Oil of bay .....	1 ounce
Oil of pimenta .....	1 dram
Oil of cloves .....	1 dram
Acetic ether.....	2 ounces

With alcohol 60 per cent the above is sufficient to make 6 gallons of bay rum.

**Bay Rum Hair Tonic.**

Bay rum.....	5 pints
Glycerin .....	16 ounces
Tincture of cantharides....	8 ounces
Tincture of soap bark.....	8 ounces
Rose water.....	8 ounces
Orange flower water.....	8 ounces

Mix, and filter if necessary.

**Bay Rum Hair Wash.**

Ammonium carbonate.....	5 drams
Borax .....	$\frac{1}{2}$ ounce
Distilled water.....	$1\frac{1}{2}$ pints
Glycerin .....	10 ounces
Oil of bergamot.....	8 drops
Oil of rosemary .....	3 drops
Oil of bay .....	5 drops
Oil of rose .....	2 drops
Talcum .....	1 ounce

Dissolve the ammonium carbonate and borax in the distilled water. Mix the oils and rub them with the talcum; add the water gradually, stirring constantly; add the glycerin and filter.



**Bay Rum Hair Wash.**

Glycerin .....	4 ounces
Tincture of cantharides...	$\frac{1}{4}$ ounce
Ammonia water.....	$\frac{1}{2}$ ounce
Rose water.....	2 ounces
Bay rum, enough to make.	1 pint

Mix and filter.

**Bay Rum Shampoo.**

White castile soap.....	$\frac{1}{2}$ ounce
Rose water.....	1 ounce
Ammonia water.....	1 ounce
Bay rum .....	8 ounces
Water, enough to make....	2 pints

Dissolve the soap in 1 pint of water and add the other ingredients; mix and filter.

**BRILLIANTINES.****Brilliantine.**

Castor oil.....	4 fl. drams
Almond oil.....	$3\frac{1}{2}$ fl. ounces
Glycerin .....	$1\frac{1}{2}$ fl. drams
Extract of jockey club.....	3 fl. drams
Alcohol, quantity sufficient to make.....	8 fl. ounces

Fill in 2 ounce bottles and shake before using.

**Brilliantine.**

Almond oil.....	4 ounces
Glycerin .....	$\frac{1}{2}$ ounce
Rectified spirit.....	2 ounces
Oil of rose geranium.....	6 drops

Shake and fill quickly in small bottles.

**Brilliantine.**

Castor oil.....	1 ounce
Glycerin .....	1 ounce
Tincture of benzoin.....	2 drams
Alcohol .....	8 ounces
Perfume, quantity sufficient.	

Shake and fill quickly in small bottles.

**Brilliantine.**

Honey .....	1 fl. ounce
Glycerin,	
Cologne water, of each....	$\frac{1}{2}$ fl. ounce
Alcohol .....	2 fl. ounces

Mix, shake before using.

**Brilliantine.**

Glycerin .....	1 ounce
Spirit .....	8 ounces
Rose water.....	8 ounces

Mix.

**Brilliantine.**

Castor oil.....	2 drams
Almond oil.....	4 ounces
Perfume oils.....	15 drops
Alcohol, enough to make..	8 ounces

Mix.

**Brilliantine, Non-Separable.**

Castor oil.....	$\frac{1}{2}$ ounce
Alcohol, 95 per cent.....	1 ounce
Otto of rose.....	2 drops
Oil of neroli.....	2 drops

Mix and color with tincture of saffron.

**Brilliantine, Non-Separable.**

Castor oil.....	4 ounces
Alcohol, 90 per cent.....	8 ounces
Oil of neroli.....	6 drops
Oil of rose geranium .....	10 drops
Oil of verbena .....	6 drops
Oil of lemon .....	30 drops

Green color may be imparted by green oil of elder, pale rose by alkanet, golden with saffron or oily butter color.

**Brilliantine, Solid.**

Veal fat.....	4 ounces
Spermaceti .....	2 ounces
Castor oil.....	12 ounces
Oil of bitter almond .....	1 drop
Oil of cloves .....	10 drops
Oil of bergamot .....	20 drops

Melt together the first three ingredients, and add the perfumes when nearly cold.

**Brilliantine, Solid.**

Almond oil.....	$2\frac{1}{2}$ pounds
Spermaceti .....	$\frac{1}{2}$ pound
Oil of lemon.....	3 ounces

Melt the spermaceti at a low temperature; add the oil and heat until all flakes disappear. Let the jars into which it is to be poured be warm, and then cool as slowly as possible to insure good crystals.

**MOUSTACHE POMADES.****Perfume for Stick Pomades.**

Bergamot oil.....	400 parts
Lemon oil.....	300 parts
Lavender oil.....	200 parts
Neroli oil.....	50 parts
Cinnamon oil.....	30 parts
Clove oil.....	20 parts
Wintergreen oil.....	10 parts
Ylang ylang oil.....	5 parts
Heliotropin .....	5 parts
Cumarin .....	1 part

Mix, and let stand for several days before using. Five drops to every 3 ounces of pomade are sufficient.

**Color for Stick Pomades.**

For golden cosmetic, use ethereal solution of annatto; for blonde or brown, use burnt umber, for black, use lampblack.

**White Stick Pomade.**

White wax.....	2 ounces
Castor oil.....	1 ounce
Venetian turpentine.....	1 ounce

Melt together and add from 5 to 10 drops of perfume.

**Blonde Stick Pomade.**

To each pound of white stick pomade (preceding formula), add 1 dram ethereal solution of annatto.

**Light Brown Stick Pomade.**

To each pound of white stick pomade, add  $\frac{1}{2}$  ounce of burnt umber.

**Dark Brown Stick Pomade.**

To each pound of white stick pomade, add from 1 to 2 ounces of burnt umber.

**Black Stick Pomade.**

To each pound of white stick pomade, add 1 ounce of lampblack.

**Moustache Cosmetique, Hard.**

Yellow wax.....	5 ounces
Benzoinated lard.....	4 ounces

Melt, and add:

Venice turpentine.....	1 ounce
Elemi .....	$\frac{1}{2}$ ounce
Balsam peru.....	15 drops
Oil of bergamot.....	10 drops

When almost cold, roll into sticks.

This formula may be used as a basis for various cosmetics and the different colors added as indicated in the preceding formulas.

**Black Moustache Cosmetique.**

Lard .....	5 ounces
Wax .....	2 ounces
Ivory black.....	2 ounces

Mix and pour into molds.

**Stick Pomade.**

Lanolin, anhydrous.....	1½ ounces
Spermaceti .....	1 ounce
Castor oil.....	4 ounces
Oil of almond .....	2 drops
Oil of cloves .....	20 drops
Oil of bergamot .....	30 drops

Melt together and add the oils.

**Pomade Hongroise for Fixing Moustaches.**

Wax .....	4 troy ounces
Oil soap.....	2 troy ounces
Oil of bergamot.....	½ fl. ounce
Powdered gum arabic.....	2 troy ounces
Water .....	4 fl. ounces

Dissolve the gum in the water; melt the wax and soap together in a water bath, stir in the solution of gum, and lastly, just before cooling, add the bergamot. Color, as required, with burnt umber or lampblack, rubbed to perfect smoothness on a slab with a little of the melted wax. Put up in small porcelain jars.

**Transparent Cosmetic.**

Tallow oil.....	8 ounces
Cocoanut oil.....	2 ounces
Soda lye (sp. g. 1.336).....	5 ounces
Alcohol (60 per cent.).....	5 fl. ounces
Canada balsam.....	½ ounce
Oil of cassia .....	15 minims
Oil of cloves .....	10 minims
Oil of lavender .....	10 minims
Oil of citronella .....	10 minims
Oil of thyme .....	10 minims
Glycerin .....	1 ounce

Melt the fats together; mix the soda lye and alcohol and warm over a water bath, then mix with the melted fat and keep well stirred over the water bath until a portion being removed sets to a soap-like firmness. Then remove from the heat and mix in the perfume, Canada balsam and glycerin, and cool as rapidly as possible by standing the vessel in cold water. A tin vessel is best for making this preparation. When nearly cold it may be run into the desired shapes or molds.

**Hungarian Pomades.**

For packing in iars or tubes. Bottles with ground glass stoppers should be used, as when ordinary corks are used the contents dry out and become hard. The tubes are best, as the pomade cannot dry out, and retains its proper consistency to the last portion. A very handsome and salable article can be produced by pasting on the tubes attractive labels, which are best affixed by a solution of water glass 100, with sugar 30. The pomade consists of:

Powdered gum arabic.....	1 ounce
Powdered soap.....	1 ounce
Water .....	2 ounces

Rubbed to a uniform paste and added to a warm, melted mass of

Cetaceum .....	2 drams
Yellow wax.....	2½ ounces
Water .....	3 ounces

Finally, add 2 drams glycerin and sufficient oils to perfume, drop by drop, with constant stirring until cool.

**Pomade.**

Yellow wax.....	5 ounces
Suet .....	2 ounces
Lard .....	2½ ounces
Turpentine, Venetian.....	1 ounce
Elemi .....	½ ounce
Perfume, quantity sufficient.	

Melt together and cast into molds.

**Moustache Fixing Varnish (Fixateen).**

Mastic .....	¾ ounce
Sandarac .....	1 ounce
Colophony .....	3 ounces
Alcohol .....	4 ounces
Ether .....	½ ounce

Dissolve and strain.

**Fixing Varnish for Moustache (Spirit Gum).**

Resin .....	1 ounce
Castor oil.....	¾ ounce
Alcohol, enough to make..	4 ounces

Dissolve, strain and perfume.

**Pomade Collante.**

For wigs and false curls:  
Take 1½ pounds of best burgundy pitch, 8 ounces virgin wax, melt them together in a stoneware vessel, and add 1 ounce of liquid pomade. Remove from the bath, and, while yet liquid and warm, stir in 7 fluid ounces of alcohol; when the spirit has been well incorporated, replace the vessel upon the sand bath, and heat up to a slight boiling, then strain through a linen cloth, perfume with 2 ounces essence bergamot, and, when cold enough, run into molds.

**REMEDIES FOR DANDRUFF.****Dandruff.**

Caustic potash.....	8 grains
Phenic acid.....	24 grains
Lanolin .....	4 drams
Cocoanut oil.....	4 drams

This preparation should be rubbed into the scalp morning and evening. Complete cure is usually effected in one to three months.

**Dandruff.**

The head should be first well washed with hot water and alcohol soap. Alcohol soap consists of two ounces of soft soap (made from olive oil), ½ ounce alcohol, and 10 minims oil of lavender. The soap is afterwards washed away with plenty of hot water and the head thoroughly dried with a warm cloth. Then thoroughly and firmly rub into the scalp a glycerole of tannin, strength from 10 to 30 grains to the ounce, according to the gravity of the case. If the tannin fails, resorcin may be tried. The process should be repeated two or three times a week as required. After total removal of the dandruff, apply daily a dressing of carbolic oil containing 1 ounce olive oil, 10 grains of absolute phenol, and 1 dram oil cinnamon, warm together and decant.

**Dandruff Lotion.**

Simple tincture of cinchona	1 fl. ounce
Solution of potassa.....	2 fl. drams
Salt of tartar.....	1 dram
Cologne water.....	1 fl. ounce
Water, enough to make....	½ pint

Mix. Apply to the head twice or three times a week.

**Dandruff Pomade.**

Ointment of nitrate of mercury ..... 1 dram  
 Oil of cade..... 1 dram  
 Olive oil..... 2 drams  
 Lanolin ..... ½ ounce  
 Mix well and apply at night.

**Dandruff Pomade.**

Ointment red oxide of mercury ..... ½ ounce  
 Benzoated lard..... 1½ ounces  
 Oil of bergamot..... 3 drops  
 Mix.

**Dandruff Pomade.**

Salicylic acid..... 20 grains  
 Chloral hydrate..... 10 grains  
 Oil of eucalyptus..... 5 drops  
 Zinc ointment..... ½ ounce  
 Cold cream..... ½ ounce  
 Mix well.

**HAIR CURLING LIQUIDS.****Hair Curling Liquid.**

Borax ..... 2 ounces  
 Gum arabic..... 1 dram  
 Add hot water (not boiling) 1 quart; stir, and as soon as the ingredients are dissolved add 3 tablespoonfuls strong spirit of camphor. On retiring to rest wet the hair with the above liquid, and roll it in twists of paper as usual.

**Hair Curling Fluid.**

Saccharated solution of lime ..... 2 drams  
 Mucilage of acacia..... 4 drams  
 Essence of rose..... ½ dram  
 Water, enough to make.... 6 ounces  
 Use as directed in the preceding.

**Hair Curling Fluid or Curlique.**

Mucilage of quince seed may be used as a bandoline, or tincture of benzoin with a little washed sulphur and oil of sweet almond.

**Curline for the Hair.**

Make a thick mucilage of gum tragacanth in rose water. Add a small quantity of salicylic acid dissolved in alcohol, as a preservative agent.

**Hair Curling Mixture.**

Ammonium chloride..... 1 dram  
 Potassium carbonate..... 2 drams  
 Extract of jasmine..... 4 drams  
 Extract of white rose..... 4 drams  
 Glycerin ..... 4 drams  
 Alcohol ..... 2 ounces  
 Powdered tragacanth..... 1 dram  
 Water ..... 36 ounces  
 Mix the tragacanth in very fine powder, with the alcohol and triturate thoroughly; then add some of the water and the glycerin to make a mucilage, mixing in the perfumes, and finally the salts, dissolved in the remainder of the water.

**Hair Curling Liquid.**

Tragacanth ..... 1 ounce  
 Rose water..... 3 pints  
 Alcohol ..... 1 ounce  
 Salicylic acid..... ¼ ounce  
 Perfume as desired.  
 Put the tragacanth in the rose water for 48 hours, stirring often; strain, add the alcohol in which the acid and perfumes are dissolved.

**Hair Curling Liquid.**

Borax ..... 3 ounces  
 Gum arabic..... 1 dram  
 Hot water..... 2 pints  
 Spirit of camphor..... 1½ fl. ounces  
 Dissolve the borax and the gum in hot water, and when nearly cold add the spirit of camphor. On retiring at night wet the hair with the above liquid.

**Hair Curling Liquid.**

Potassium carbonate..... 2 drams  
 Ammonia water..... 1 dram  
 Glycerin ..... 4 drams  
 Alcohol ..... 12 drams  
 Rose water..... 18 fl. ounces  
 Mix together. Moisten the hair; adjust it loosely, when it curls upon drying.

**Hair Curling Liquid.**

Gum arabic..... 1 dram  
 Sugar ..... 1 dram  
 Rose water..... 2 ounces  
 Mix and dissolve. Moisten the hair with the solution at bedtime; roll in twists of paper, so as to make papillotes.

**Hair Curling Liquid.**

Potassium carbonate (dry) 2 drams  
 Powdered cochineal..... ½ dram  
 Ammonia water..... 1 dram  
 Spirit of rose..... 1 dram  
 Glycerin ..... 2 drams  
 Rectified spirit..... 1½ fl. ounces  
 Distilled water ..... 18 fl. ounces  
 Digest with agitation for a week, then decant or filter. The hair is moistened with it and then loosely adjusted. The effect occurs as it dries.

**Hair Curling Powder (Powdered Bandoline).**

Dried sodium carbonate... 2 ounces  
 Powdered acacia..... 1 ounce  
 Mix and divide in 4 packages.  
 Directions: Dissolve the contents of one packet in a teacup of hot water.

**Curling Powder.**

Powdered tragacanth..... 1 dram  
 Powdered borax..... 1 pound  
 Oil of rosemary ..... 1 dram  
 Oil of rose ..... 10 drops  
 Mix intimately and proceed as in the preceding formula.

**DEPILATORIES.**

The action of all depilatories depends on the presence of a sulphide and a caustic alkali. They are applied in the form of a paste freshly prepared. The chemicals soften the hair, which is then removed with the paste by a dull knife. Warm water is then applied and after drying a soothing salve is rubbed in. If the depilatory causes much pain, it should be removed at once, for fear of producing ugly ulceration. As the action of the depilatory does not extend deeper than the epidermis, the hair bulb remains alive and a new growth soon appears.

**Depilatory.**

Powdered quicklime..... 10 grams  
 Barium sulphide..... 10 grams  
 Starch ..... 10 grams  
 The powder is first moistened with a little water and then applied. It acts in a few minutes, and is a really successful depilatory.



**Chinese Depilatory.**

Quicklime .....	16 ounces
Pearlash .....	2 ounces
Liver of sulphur.....	2 ounces

Reduce it to a fine powder and keep it in a well-closed bottle.

**Boudet's Depilatory.**

Crystallized sodium sul- phydrate .....	3 drams
Quicklime, in powder.....	10 drams
Starch .....	10 drams

Mix. To be mixed with water and applied to the skin and scraped off in two or three minutes, with a wooden knife. This depilatory, while very effective, acts very energetically upon the skin, and frequently leaves scars behind.

**Depilatory, Active.**

Orpiment .....	1 ounce
Starch,	
Quicklime, of each.....	10 ounces

Powder the orpiment thoroughly, mix with the starch and add the quicklime. A little to be made into a paste with water when required, and this paste to be spread on the hairy parts, allowed to remain for a few minutes, then removed with a blunt knife. While this is a very effective depilatory, it should be used carefully on account of the arsenic compound (orpiment).

**Depilatory.**

Barium sulphide.....	1 ounce
Zinc oxide.....	1 ounce
Starch .....	2 ounces

Mix well, and apply as paste mixed with warm water.

**Depilatory.**

Sodium sulphide.....	6 drams
Powdered quicklime.....	3 ounces
Starch .....	2 ounces
Powdered orris.....	1 ounce

Mix and apply according to the general directions given above.

**Depilatory.**

Barium sulphide.....	1 dram
Starch powder.....	1 ounce

Mix, apply as above.

**Depilatory.**

Mix 2 ounces of barium sulphide, 1 ounce of starch, and 1 ounce of zinc oxide. This depilatory is made into a paste with water, spread on the skin and allowed to remain for 10 minutes. As its success depends upon the freshness of the sulphide employed, the latter should be made as required by mixing powdered barium sulphate with its own weight of charcoal, forming the mass into a roll-like sausage, which is to be placed in the fire until deflagration is complete.

**Depilatory Pomade.**

Sodium carbonate.....	1 dram
Quicklime .....	½ dram
Charcoal powder.....	8 grains
Glycerin .....	1 fl. dram
Lard .....	7 drams

After applying this pomade to the affected parts for 10 or 12 days, the skin takes a rose tint and the hairs can be easily drawn out without pain.

**Depilatory, Liquid.**

Tincture of iodine.....	½ dram
Venice turpentine.....	1 dram
Castor oil.....	1½ drams
Alcohol .....	1½ ounces
Collodion .....	6 ounces

Paint over the parts and remove after ½ hour.

**Moles.**

Hairy moles frequently occur upon the face or upon other exposed portions of the skin. Heretofore the removal of these blemishes has been effected by means of the knife, electrolysis or caustics. The first and last methods are limited in their applications by the extent of the mole. The second method is frequently tedious. A new procedure is to apply ethylate of sodium, one thorough application being sufficient. A bland ointment is used as a dressing, and the result is a very thin, flexible scar, which is scarcely perceptible. Of course, the ethylate of sodium is applied to the patient, only under chloroform, as it is very painful.

**HAIR DYES.****Hair Dye.**

Silver nitrate.....	20 grains
Copper sulphate.....	2 grains
Ammonia water, q. s.	
Distilled water, q. s.	

Dissolve the salts in ½ ounce of water, and add ammonia water until the precipitate which is formed is redissolved. Then make up to 1 ounce with water. Apply to the hair with an old tooth or nail brush. This solution slowly gives a brown shade. For darker shades, apply a second solution, composed of:

Yellow sulphide of am- monia .....	2 drams
Ammonia water.....	1 dram
Distilled water.....	1 ounce

**Tea Hair Dye.**

Black tea.....	6 ounces
Boiling water.....	1 pint

Boil together for half an hour, keeping to the quantity of water. Then strain and cool, add—

Bay rum.....	8 fl. ounces
Oil of lavender.....	1 dram
Glycerin .....	4 ounces

Also by substituting half the quantity of extract of logwood for the tea a brown dye is produced. This is much used in some parts, and is said to be excellent. It is perfectly harmless.

**Brown Hair Dye.**

Dissolve 8 parts pyrogallie acid in 16 parts of alcohol, and mix with a solution of 1 part sulphide sodium in 48 parts water. Apply once a day with a soft hairbrush.

**Brown Hair Dye.**

Lead acetate.....	2 drams
Sodium hyposulphite.....	1 ounce
Rose water.....	14 ounces
Glycerin .....	2 ounces

Dissolve the lead and sodium salts in separate portions of the water, filter separately, mix the solutions, and add the glycerin.

**Chestnut Brown Hair Dye.**

Pyrogallie acid.....	1 dram
Copper chloride.....	2 drams
Nitric acid.....	5 drops
Distilled water.....	6 ounces

Dissolve.

**Non-Injurious Hair Dye.**

A solution composed of

Paraphenyldiamin .....	20 parts
Caustic soda.....	14 parts
Water .....	1,000 parts

Is applied to the hair after all fatty matter has been removed by previous washing with an alkaline solution. The application is followed by a wash consisting of—

Peroxide of hydrogen..... 3 parts  
Water .....100 parts

In the course of the day the hair assumes a dark color, which deepens in hue to a dark blue-black upon further application of the dye. If a brown color is desired it is recommended to use a 5 per cent solution of hydroxide of iron in place of peroxide of hydrogen.

#### Crescent Hair Dye (Single Bottle).

Copper nitrate.....360 grains  
Silver nitrate (crystal).... 7 ounces  
Distilled water..... 60 ounces  
Ammonia water, a sufficient quantity.

Dissolve the salts in the water and add the ammonia water carefully until the precipitate is redissolved. This properly applied will produce a very black color; a lighter shade, even to light brown, can be secured by diluting the solution. Equally good results have been obtained with use of copper sulphate as with the nitrate.

#### Bismuth Hair Dye.

No. 1.  
Bismuth subnitrate.....200 grains  
Water ..... 2 ounces  
Nitric acid.....420 grs. or q. s.

Use heat to effect solution.

No. 2.  
Tartaric acid.....150 grains  
Sodium bicarbonate.....168 grains  
Water ..... 32 ounces

When effervescence of the latter has ceased, mix the cold liquids by pouring No. 1 into No. 2, with constant stirring. Allow the precipitate to subside, transfer it to a filter or strainer, and wash with water until free from the sodium nitrate formed, as this salt would be an unnecessary impediment to the operation of the dye. Now allow the magma to drain until its weight is reduced to at least 4 ounces. This can be readily determined without removing it from the filter and funnel, if both have been previously weighed. Transfer the magma, which consists of bismuth tartrate, to a dish, and dissolve it by the addition of sufficient stronger ammonia water.

Next dissolve 100 grains of sodium hyposulphite in 3 ounces of water, and mix the two liquids. The total volume of the product should be about 7 or 8 ounces, which would make the solution contain about 10 per cent of bismuth tartrate, the product from above quantities being nearly 300 grains. The addition of 1 ounce of glycerin is calculated to make it more effective in coloring the hair, as this ingredient prevents entire drying-up of the constituents, and thus favors a continuation of the decomposition.

Should it be desired to produce a jet-black, this may be accomplished (after the dye given above has first been applied and allowed to dry) by the application of a solution of an alkaline sulphide or sulphuret. It is not necessary that the latter salt should be absolutely pure, as the commercial sulphuret of potassium answers well if fresh or undecomposed. The application of these dyes and mordants is usually made by means of a toothbrush and comb, so as to avoid staining the scalp.

#### Walnut Hair Dye.

The hulls of green walnuts are pounded up, and the juice expressed by squeezing in a tincture press. The juice is then rubbed up with olive oil.

#### Walnut Hair Dye.

Green walnut shells..... 40 parts  
Alum ..... 5 parts  
Olive oil .....200 parts

Digest on water bath until all moisture has been dispelled. Express and perfume to suit.

#### Walnut Hair Dye.

The juice as expressed is used mixed with a little rectified spirits and perfumed with oil of cloves, the latter acting as a preservative. The whole is allowed to stand for a week or two with occasional agitation, and the clear solution is eventually decanted. Sometimes salt is used to preserve it. These dyes stain the skin very strongly.

#### Silver Hair Dye.

It is claimed that the hair dyes depending on the formation of silver sulphide are the best. They should be prepared in two bottles and the bottles kept separately. In applying the hair must first be cleansed of all grease by washing it with a weak alkaline solution, as a dilute solution of washing soda, and drying the hair with a towel. Next pour a little of bottle No. 1 into a saucer and apply with a white bristle brush. Immediately afterwards apply No. 2 in the same way with a black bristle brush. Avoid touching the skin. Wipe the parts around the hair receiving the dye with a damp sponge and do not wash or grease the hair for several hours after application. It is best to apply the dye at night.

#### Silver Hair Dye.

(Bottle No. 1.)

Pyrogallic acid..... ½ dram  
Sodium hyposulphite..... 10 grains  
Water ..... 2 ounces

(Bottle No. 2.)

Silver nitrate..... 20 grains  
Stronger water of ammonia, q. s.  
Water, enough to make... 2 ounces

Dissolve the nitrate in ½ ounce of water, add ammonia water until the precipitate is redissolved, and then water to make 2 ounces. Apply as in the preceding.

#### Hair Dyes.

The preceding formula is a typical and a good one for all hair dyes of the silver compounds. The degree of color imparted depends on the amount of silver nitrate used. The formula given gives a black color, but by reducing the quantity of silver nitrate employed, dark or light brown may be produced.

#### Hair Dyes.

(Bottle No. 1.)

Sodium hyposulphite..... 1 dram  
Water ..... 3 ounces

(Bottle No. 2.)

Silver nitrate..... 40 grains  
Copper sulphate..... ¼ grain  
Ammonia water..... 3 drams  
Water, enough to make... 3 ounces

Prepare as directed in the silver-pyrogallic hair dye given above and apply as outlined in the preceding paragraph.

#### Blonde Hair Dye.

For blonde hair the silver dyes are not serviceable. The following gives good results:

(Bottle No. 1.)

Potassium permanganate... ½ dram  
Water ..... 1 ounce

(Bottle No. 2.)

Sodium hyposulphite..... 20 grains  
Water ..... 1 ounce  
Apply as directed above.

#### Mercurial Hair Dye (Black).

(Bottle No. 1.)

Mercury bichloride..... 6 grains  
Ammonium chloride..... 6 grains  
Distilled water..... 3 ounces

(Bottle No. 2.)  
Sodium hyposulphite..... 10 grains  
Water ..... 2 ounces

Apply as directed above.

#### Golden Hair Dye (Solution of Hydrogen Peroxide).

Wash and dry the hair and apply the peroxide carefully with a sponge or soft brush. The amount of bleaching depends on the quantity used.

#### Non-Metallic Hair Dye (Brown).

Pyrogallie acid.....  $\frac{1}{2}$  ounce  
Water of ammonia..... 2 drams  
Alcohol ..... 1 ounce  
Water ..... 3 ounces

Dissolve the acid in the alcohol, add the other ingredients and mix.

#### Non-Metallic Hair Dye (Chestnut).

Pyrogallie acid..... 1 dram  
Alcohol .....  $\frac{1}{2}$  ounce  
Nitric acid..... 5 drops  
Water, enough to make... 4 ounces

Mix and dissolve.

#### Darkening the Hair.

Tannic acid.....  $\frac{1}{2}$  dram  
Glycerin ..... 2 drams  
Oil of sweet almond..... 6 drams  
Oil of neroli ..... 2 drops  
Oil of orange peel..... 20 drops

Mix and dissolve.

#### Henna Hair Dye (Auburn).

Henna leaves, in powder.. 2 ounces  
Boiling water, enough to make a paste.

Apply at night to the hair as a poultice. Next morning brush out the dry powder and apply a weak ammonia solution, then apply a 2 per cent potassium permanganate solution.

#### Raven's Wing Hair Dye.

(Two bottles.)

(No. 1.)

Nitrate of silver (crystal).  $1\frac{1}{2}$  ounces  
Distilled water..... 12 ounces  
Ammonia water, sufficient to make a clear solution.

Dissolve the nitrate of silver in the water and add the ammonia water until the precipitate is redissolved.

(No. 2.)

Pyrogallie acid..... 2 drams  
Gallic acid..... 2 drams  
Cologne water..... 2 ounces  
Distilled water..... 4 ounces

Apply as directed in the preceding formulas.

#### Twigg's Hair Dye.

Precipitated sulphur..... 1 dram  
Lead acetate..... 1 dram  
Rose water..... 4 fl. ounces

Triturate together in a mortar. This should be applied twice a day until it gradually restores the hair to its natural color. The addition of  $\frac{1}{2}$  ounce of glycerin will take from it a drying property which is undesirable.

#### Moustache Dye.

Silver nitrate..... 60 grains  
Ammonia water.....  $\frac{1}{2}$  fl. ounce  
Distilled water.....  $2\frac{1}{2}$  n. ounces  
Olive oil..... 1 fl. ounce

Dissolve the silver nitrate in the water, add the ammonia water, and finally the olive oil. The mixture is to be shaken before used.

## HAIR RESTORERS, OILS AND POMADES.

#### Hair Restorer.

Lac sulphur..... 1 dram  
Lead acetate..... 1 dram  
Bay rum..... 4 ounces  
Jamaica rum..... 2 ounces  
Sodium chloride..... 1 dram  
Rose water..... 4 ounces  
Glycerin ..... 2 ounces

Mix well, apply with a sponge, shaking well before using.

#### Regeneration of the Hair.

The neighborhood of the bald spot is shaved, or the hairs which come out easily are removed, and an application is made of a mixture composed of equal parts of chloroform and glacial acetic acid. This mixture has caustic properties, and must be applied lightly with a camel's hair brush each evening; and if the bare spot be large, only part of it can be treated at a time, or too much pain will be caused.

#### Sage Hair Restorer.

Sage ..... 1 ounce  
Boiling water..... 1 pint  
Steep for one hour, strain and add:  
Glycerin ..... 2 ounces  
Borax .....  $\frac{1}{4}$  ounce  
Lac sulphur.....  $\frac{1}{2}$  ounce  
Tincture of cantharides...  $\frac{1}{4}$  ounce

Mix and perfume with oil of bergamot.

#### Hair Restorative.

Bay rum..... 1 pint  
Alcohol .....  $\frac{1}{2}$  pint  
Castor oil..... 1 ounce  
Ammonium carbonate.....  $\frac{1}{4}$  ounce  
Tincture of cantharides...  $\frac{1}{2}$  ounce

Shake when used. Use daily.

#### Eau Lustral (Hair Restorative).

Castor oil..... 2 quarts  
Linseed oil..... 4 ounces  
Tincture of cantharides... 4 ounces  
Alcohol ..... 13 quarts  
Bergamot oil..... 2 ounces  
Lemon oil..... 1 ounce  
Clove oil.....  $\frac{1}{2}$  ounce  
Neroli oil..... 2 drams

Mix the two fat oils and dissolve them in the alcohol by agitation. Then add the tincture of cantharides and the perfumes, and color with cochineal tincture or henna tincture.

#### Imperial Hair Restorer.

Quinine sulphate..... 1 scruple  
Powdered borax.....  $\frac{1}{2}$  dram  
Ammonia water..... 2 drams  
Tincture of cinchona compound .....  $\frac{1}{2}$  ounce  
Imported bay rum, enough to make..... 4 ounces

To 1 ounce of bay rum add the quinine and the borax, add another ounce of bay rum, gradually add the ammonia, then sufficient bay rum to make 4 ounces, and filter.

#### Jaborandi Hair Restorer.

Quinine sulphate..... 20 grains  
Tincture of jaborandi..... 1 ounce  
Glycerin ..... 1 ounce  
Eau de cologne..... 2 ounces  
Bay rum..... 2 ounces  
Rose water..... 11 ounces



Dissolve the quinine in the rose water with the aid of 20 drops dilute sulphuric acid, and add the glycerin. Mix the tincture, cologne and bay rum and add to the rose water mixture.

#### Persian Hair Restorer.

Vinegar of cantharides....	1 ounce
Milk of sulphur.....	$\frac{1}{2}$ ounce
Glycerin .....	10 ounces
Oil of rose.....	10 drops
Water, enough to make...	2 pints

Mix well and apply at night with a soft sponge.

#### Hair Pomade (Lassar's).

Pilocarpine .....	1 dram
Quinine hydrochloride....	2 drams
Sulphur, precipitated.....	5 drams
Balsam of peru.....	10 drams
Ox marrow, enough to make .....	8 ounces

Mix well and apply at night.

#### Castor Oil Pomade, Transparent.

Spermaceti .....	2 ounces
Castor oil (Italian).....	5 ounces

Melt, and add gradually, with constant stirring:

Alcohol .....	5 ounces
Oil of bergamot .....	30 minims
Oil of neroli .....	4 minims
Oil of cloves .....	4 minims
Oil of verbena .....	4 minims
Oil of rose virgin.....	4 minims

Fill into warm bottles.

#### Acetone Hair Wash.

Oil of sweet almond.....	4 drams
Ammonia water.....	3 drams
Acetone .....	3 drams
Tincture of cantharides...	6 drams
Cologne .....	4 drams
Distilled water, to make..	6 ounces

Mix the oil with a little water, add the ammonia, emulsify, add the other ingredients and enough water to make 6 ounces.

#### Oleate of Quinine Pomade.

Sulphate of quinine.....	1 ounce
Stearic acid.....	$2\frac{1}{2}$ ounces
Oleic acid.....	$7\frac{1}{2}$ ounces

Melt the fats, and rub the quinine with a little of the mixture, then add all together, stir till cool.

#### Star Hair Oil.

Castor oil.....	$6\frac{1}{2}$ ounces
Alcohol .....	1 ounce
Oil of citronella .....	6 drops
Oil of lavender .....	12 drops

Mix. An excellent dressing.

#### Regenerative Pomade.

Olive oil.....	24 ounces
White wax.....	3 ounces
Palm oil.....	3 ounces
Rose pomade.....	6 ounces
Jasmine pomade.....	2 ounces
Orange pomade.....	1 ounce

Melt on a water bath and mix.

#### Family Hair Oil.

Castor oil.....	1 pint
Alcohol .....	$6\frac{1}{2}$ pints
Tincture of cantharides...	$\frac{1}{2}$ pint
Oil of lavender .....	$\frac{1}{2}$ ounce
Oil of rosemary .....	$\frac{1}{2}$ ounce
Oil of cloves .....	1 ounce
Oil of bergamot .....	2 ounces
Powdered alkanet root...	1 ounce

Mix the oils in a gallon bottle; put the alkanet root on a filter or pack in a funnel, and pour on the alcohol until the color has all been discharged, then add alcohol to complete the quantity directed.

#### Burdock Root Hair Oil.

Burdock root, well dried and coarsely powdered..	1 pound
Best olive oil.....	4 pints
Orange oil.....	$\frac{1}{2}$ ounce
Spanish geranium oil.....	2 drams
Clove oil.....	$\frac{1}{2}$ dram
Neroli oil.....	15 drops

Digest the burdock with the olive oil in a hot-water bath for four hours, and then set the mixture aside for ten days, giving it frequent stirrings. Filter off and add the essential oils. To get good results the oil should be well rubbed into the scalp and hair follicles.

#### Perfumed Hair Oil.

Castor oil.....	10 fl. ounces
Alcohol .....	2 fl. ounces
Essence of jasmine.....	2 fl. drams

Mix.

Any other essential oil may be substituted for the essence of jasmine; the bottles should be labeled according to perfume, and the mixture colored rose oil red.

#### Walnut Hair Oil.

Crush 2 ounces of fresh green walnut shells with  $\frac{1}{4}$  ounce of powdered alum to a smooth green paste; digest with 10 ounces of benzoated oil in a water bath until all aqueous vapor has been driven off. Perfume with 2 drops of oil of rose and 10 drops of oil of neroli. The walnut shells are best obtained about the end of August or beginning of September. They contain besides oil and other constituents, a substance resembling pyrogallic acid, and impart a brown shade to the hair.

#### Camphorated Hair Oil.

Olive oil in which 5 or 6 per cent camphor (crushed) has been dissolved by means of a gentle heat. A popular application in weak and falling hair. To increase its action, a little oil of thyme, rosemary, or nutmeg should be added to it.

#### Cocoonut Hair Oil.

Cocoonut oil.....	$\frac{7}{8}$ pint
Castor oil.....	$\frac{1}{2}$ pint
Alcohol .....	6 parts
Slippery elm bark.....	1 ounce
Water .....	4 ounces
Oil of bergamot .....	1 ounce
Oil of lemon .....	$\frac{1}{2}$ ounce
Oil of pimenta .....	$\frac{1}{4}$ ounce
Oil of almond .....	1 dram

The cocoonut oil is mixed with the castor oil and the alcohol mixed slowly with them at a slight heat. The elm bark in coarse powder is dissolved in the water and strained and mixed by agitation with the rest. Lastly it is filtered, perfumed and colored with a little tincture of gamboge.

#### Hair Oil.

Castor oil,  $\frac{1}{2}$  pint; 95 per cent alcohol,  $\frac{1}{2}$  pint; tincture of cantharides,  $\frac{1}{2}$  ounce; oil of bergamot, 2 drams. Color a pale pink with alkanet root.

#### Benzoated Hair Oil.

Olive (or almond) oil....	1 pint
Crushed benzoin (Siam)..	1 ounce

Digest on a water bath for six hours.

**Hair Oils.**

The best oils for hair oils are almond and olive oils, to which a small amount (5 to 10 per cent) of white vaseline oil has been added. Castor oil should be used but sparingly (1 or 2 per cent). These oils, alone or in combination, may be perfumed with any perfume desired. Benzoated oil (see preceding formula) also forms an excellent base for hair oils.

**Macassar Oil (Huile de Macassar).**

This famous oil of Oriental origin takes the same place among the oils that Farina cologne holds among the toilet waters. There are hundreds of formulas in existence, but the original is still a mystery. Any of the oils noted above, colored red and properly perfumed, will probably answer. Some of the best known formulas are given below:

**Huile de Macassar (Macassar Oil) of Naquet.**

Oil of ben .....	8 ounces
Oil of noisette .....	4 ounces
Alcohol .....	1 ounce
Essence of bergamot.....	1 dram
Spirit of musk.....	1 dram
Spirit of Portugal.....	$\frac{1}{2}$ dram
Essence of rose.....	10 drops

Mix and keep the whole over a water bath for one hour in a well-closed vessel. Digest them in the same vessel for a week, stirring several times daily. Color with alkanet.

**Macassar Oil.**

Oil of ben or almond (tinted red).....	1 pint
Oil of rosemary .....	1 dram
Oil of origanum .....	1 dram
Oil of nutmeg .....	15 drops
Otto of roses.....	15 drops
Oil of neroli.....	6 drops
Essence of musk .....	3 or 4 drops

Mix well.

**Macassar Oil.**

Olive oil.....	1 pint
Oil of lemon .....	15 drops
Oil of cinnamon .....	8 drops
Oil of cloves .....	8 drops
Oil of rose .....	3 drops
Alkanet .....	1 ounce

Macerate the alkanet for an hour on a water bath in the oil, filter, add the perfumes and mix.

**Macassar Oil.**

Benzoated oil.....	8 ounces
Alkannin .....	20 grains
Oil of bergamot .....	$\frac{1}{2}$ dram
Oil of lemon .....	20 drops
Oil of cinnamon .....	2 drops
Essence of musk.....	2 drops

Mix well.

**Huile de Phenix or Baume Nerval.**

Beef marrow, purified....	4 ounces
Lard, purified.....	2 ounces
Concrete oil of mace.....	4 ounces
Oil of cloves, lavender, mint, rosemary, sage, and thyme, of each.....	2 drams
Balsam of tolu.....	4 drams
Camphor .....	1 dram
Alcohol, 85%.....	1 ounce

Place the alcohol in a glass matrass, and by the heat of a water bath, dissolve therein the balsam tolu. This done, add the camphor and essential oils. On the other hand, melt together the marrow, lard, oil of mace, and, as it congeals, add the alcoholic solution first made, and stir the whole well until entirely cool.

**Stimulating Pomatum.**

Almond oil.....	$\frac{1}{4}$ pound
White wax.....	$\frac{1}{2}$ ounce
Clarified lard.....	3 ounces
Ammonia water.....	$\frac{1}{4}$ ounce
Oil of lavender .....	1 dram
Oil of cloves .....	1 dram

Melt together the fats, add the perfumes and ammonia and stir till cool.

**Nursery Hair Oil.**

Benzoin .....	$\frac{1}{2}$ ounce
Alkannin .....	$\frac{1}{2}$ ounce
Oil stavesacre.....	1 ounce
Almond oil.....	20 ounces

Macerate for a week, shaking often, then filter and add—

Oil of neroli .....	10 drops
Oil of rose .....	5 drops
Oil of lemon .....	15 drops

**Cantharidin Oil.**

Cantharidin .....	1 grain
Acetone .....	40 drops
Almond oil.....	2 ounces

Dissolve the cantharidin in the acetone, add the oil and perfume.

**Walnut Oil.**

Fresh walnut shells.....	2 ounces
Benzoated oil.....	10 ounces

Crush the walnut shells, macerate in the oil on a water bath for 12 hours, filter and perfume.

**Perfumes for Pomades, Hair Oils, Etc.**

Balsam of peru.....	1 dram
Oil of bergamot .....	1 dram
Oil of petit grain.....	1 dram
Oil of clove .....	2 drams
Oil of lavender .....	2 drams
Oil of lemon .....	3 drams
Tincture of ambergris.....	4 drams

One dram of this perfume is sufficient for 1 pint of oil.

**Perfumes for Pomades, Hair Oils, Etc.**

Liquid storax.....	$1\frac{1}{2}$ drams
Oil of sassafras .....	3 drams
Oil of clove .....	6 drams
Oil of orange .....	6 drams
Oil of bergamot .....	3 ounces

Mix and filter. Use 1 dram to a pint of oil.

**Hair Oil Perfume.**

The quantities in the following four formulas are for 1 quart of hair oil:

Heliotropin .....	8 grains
Cumarin .....	1 grain
Oil of orris .....	1 drop
Oil of lemon .....	3 ounces
Oil of rose .....	16 minims
Oil of bergamot .....	32 minims

**Hair Oil Perfume.**

Cumarin .....	1 grain
Oil of lemon .....	16 minims
Oil of bergamot .....	48 minims

**Hair Oil Perfume.**

Cumarin .....	2 grains
Oil of wintergreen .....	2 drops
Oil of cloves .....	4 drops
Oil of cassia .....	4 drops
Oil of lavender flowers.....	16 minims
Oil of lemon .....	48 minims
Oil of bergamot .....	72 minims

**Hair Oil Perfume.**

Cumarin .....	1 grain
Oil of bitter almond.....	2 drops
Oil of cassia .....	2 drops
Oil of lavender flowers....	32 minims
Oil of lemon .....	48 minims
Oil of bergamot .....	80 minims

**HAIR TONICS.****Sage Hair Tonic.**

Fluidextract of sage.....	8 ounces
Tincture of green soap.....	7½ ounces
Tincture of red cinchona....	3 ounces
Tincture of cantharides .....	1½ ounces
Glycerin .....	4 ounces
Chloral hydrate.....	20 drams
Cologne (of good quality)....	15 ounces
Oil of bergamot .....	4 drams
Oil of sweet orange peel....	4 drams
Oil of neroli, P. G.....	½ dram
California brandy, enough to make.....	1 gallon

Mix the first five ingredients together; dissolve the chloral hydrate in the cologne; make a mixture of the oils in the alcohol and add to the cologne; then put all together and let stand for a week or longer. Filter through precipitated phosphate of calcium.

**Sage Hair Tonic.**

Lappa .....	12 ounces
Salvia .....	4 ounces
Pilocarpus .....	8 ounces
Mercuric chloride.....	16 grains
Powdered cantharides.....	64 grains
Resorcin .....	1 ounce
Glycerin .....	4 fl. ounces
Alcohol water, perfume, of each q. s. to make.....	1 gallon

Make 4 pints of an infusion with the burdock, sage and jaborandi, by enclosing the drugs in a bag, suspended in the water, and keeping it hot for 30 minutes. Express and strain when cold.

Mix the corrosive sublimate and cantharides with 4 pints of alcohol and add the following perfume; oil of bay, 1 dram; oil of cloves, 30 minims; oil of lavender, 1 dram; oil of lemon, 2 drams; oil of spearmint, ½ dram. Shake the alcoholic mixtures occasionally for three days and then gradually add it to the infusion. To the mixture add the resorcin and glycerin, allow to stand for seven days with occasional agitation and then filter until perfectly clear. According to the author of this formula, this tonic can be recommended for use once a day, while the label should state that the scalp should be washed once a week in tar water. Estimated cost per gallon, about \$2.10.

**Resorcin Hair Tonic.**

Resorcin .....	5.0 parts
Menthol .....	0.5 parts
Alcohol .....	150.0 parts
Rose water.....	25.0 parts
Cologne water.....	25.0 parts

Mix.

**Mixture for Falling Hair.**

Glacial acetic acid.....	1.0 parts
Resorcin .....	1.0 parts
Chloral hydrate.....	4.0 parts
Solution of formaldehyde	5.0 parts
Castor oil.....	0.4 parts
Pilocarpine .....	0.5 parts
Alcohol .....	200.0 parts
Essence of violet, q. s.	

Mix. Apply to the scalp by rubbing.

**Sage and Sulphur Hair Tonic.**

Sage .....	1 ounce
Boiling water.....	1 pint
Steep for an hour, strain, and add:	
Glycerin .....	2 ounces
Borax .....	¼ ounce
Lac sulphur.....	¼ ounce
Tincture of cantharides....	¼ ounce
Perfume with oil of bergamot.	

Shake well and apply with a soft sponge.

**Hair Tonic.**

Chloral hydrate.....	2 drams
Vinegar of cantharides.....	4 drams
Tincture of cinchona.....	2 drams
Glycerin .....	½ ounce
Orange flower water,	
Rose water, of each equal	
parts, to make.....	8 ounces

Brush into the roots of the hair every morning, and rub in a little lanolin at night.

**Hair Tonic.**

Quinine sulphate.....	20 grains
Tincture of cantharides....	2 fl. drams
Fluidextract of jaborandi....	2 fl. drams
Alcohol .....	2 fl. ounces
Glycerin .....	2 fl. ounces
Bay rum.....	6 fl. ounces
Rose water, enough to make .....	15 fl. ounces

The quinine is dissolved in the alcoholic liquids by warming slightly, then the other ingredients are added.

**Hair Tonic.**

Fluidextract of cinchona,	
pale .....	1 dram
Tincture of cantharides....	2 drams
Glycerin .....	1 ounce
Bay rum.....	½ ounce
Rose water, enough to make .....	20 ounces

Apply at night with a soft brush or sponge.

**Hair Tonic.**

Sodium soziodol.....	2 parts
Distilled water.....	300 parts
Cologne water.....	20 parts

As a wash for the hair and scalp.

**Hair Tonic.**

Tincture of cantharides....	4 drams
Ammonia water.....	4 drams
Rose water.....	2 ounces
Glycerin .....	4 ounces
Bay rum.....	9 ounces

Apply at night with a soft sponge.

**Hair Tonic.**

Carbolic acid.....	30 minims
Tincture of nux vomica....	2 drams
Compound tincture of cin-	
chona .....	1 fl. ounce
Tincture of cantharides....	30 minims
Cologne water.....	1 fl. ounce
Cocoonut oil, enough to make .....	4 fl. ounces

To be applied to the scalp twice a day with a small sponge.

Shake well before applying.

**Astringent Hair Tonic.**

Tannin .....	1 dram
Tincture of myrrh.....	1 fl. ounce
Glycerin .....	5 fl. ounces
Rose water.....	5 ounces

Mix in the order given and apply with a soft sponge.



**Hair Tonic.**

Olive oil..... 2 ounces  
 Alcohol..... 3 ounces  
 Strong salt water..... 3 ounces  
 Spirit of lavender..... 1 ounce  
 Rub into the scalp once daily.

**Salicylic Hair Tonic.**

Salicylic acid..... 50 grains  
 Borax..... 2½ drams  
 Tincture of cantharides... 1½ fl. ounces  
 Bay rum..... 6 fl. ounces  
 Rose water..... 6 fl. ounces  
 Boiling water, enough to make..... 18 fl. ounces  
 Rub into the scalp every night.

**Cantharidine Lotion.**

Aromatic spirit of am-  
 monia..... 2 ounces  
 Glycerin..... 1 ounce  
 Tincture of cantharides... ½ ounce  
 Rosemary water, to make. 20 ounces  
 Mix. Apply 3 times a week.

**Cantharides Lotion.**

Glycerin..... 2 ounces  
 Tincture of cantharides... ½ ounce  
 Ammonia water..... ½ ounce  
 Rose water..... 2 ounces  
 Bay rum..... 10 ounces  
 Mix. Apply 3 times a week.

**Conservateur, for Diseases of the Hair.**

Tincture arnica..... 10 drams  
 Glycerin..... 5 drams  
 Alcohol..... 10 drams  
 Water..... 60 drams  
 Mix and apply every night.

**Crown Hair Tonic.**

Tincture of capsicum..... 3 drams  
 Tincture of cantharides... 3 drams  
 Aromatic spirit of am-  
 monia..... 1½ ounces  
 Oil of lavender..... 1 dram  
 Tincture of cinchona..... 2 ounces  
 Alcohol, to make..... 16 ounces  
 Mix and filter. Apply 3 times a week.

**Camphor Hair Tonic.**

Glycerite of borax..... 1 ounce  
 Spirit of camphor..... 2 ounces  
 Spirit of rosemary..... 1 ounce  
 Aromatic spirit of am-  
 monia..... ½ ounce  
 Bay rum, enough to make 8 ounces  
 Mix, shake and filter. Use every night.

**Chillie Hair Lotion.**

Tincture of cantharides... 1½ drams  
 Tincture of capsicum..... 20 drops  
 Glycerin..... ½ ounce  
 Cologne, enough to make.. 6 ounces  
 Mix. Apply 3 times a week.

**Capillary Stimulant.**

Ammonia water..... ½ ounce  
 Tincture of cantharides... ½ ounce  
 Cologne..... 1 ounce  
 Water, enough to make... 8 ounces  
 Mix. Apply with soft sponge morning and night.

**Acid Stimulant for the Hair.**

Acetic acid..... 1 ounce  
 Spirit of chloroform..... 1 ounce  
 Cologne..... 1 ounce  
 Glycerin..... 1 ounce  
 Water, enough to make... 8 ounces  
 Mix, filter through talc. Apply at night.

**Acetous Hair Lotion.**

Vinegar of cantharides... ½ ounce  
 Tincture of cinchona..... ½ ounce  
 Aromatic acetic acid..... ½ ounce  
 Cologne..... 2 ounces  
 Water, enough to make... 8 ounces  
 Mix and filter through talc.

**Alkaline Hair Lotion.**

Borax..... 1 dram  
 Glycerin..... 2 drams  
 Tincture of cantharides... 6 drams  
 Ammonia water..... 1 ounce  
 Bay rum, enough to make. 6 ounces  
 Mix and filter.

**Eau Athenienne.**

Alcohol, best quality..... 8 quarts  
 Vanilla tincture..... 1¼ pounds  
 Cumarin tincture..... 7 ounces  
 Bergamot oil..... 3½ ounces  
 Rose geranium oil..... 11 drams  
 Clove oil..... 14 drams  
 After 8 days add 1 quart of water and mix thoroughly.

**Quinine Hair Tonic (Eau de Quinine).**

Quinine is supposed to be a good tonic for the hair and a great variety of formulas containing this alkaloid are in use. The sulphate is generally used, and sometimes the hydrochloride. The quinine salts are dissolved in alcohol, or bay rum, and water and perfume added. Most quinine hair tonics are colored red by tincture of alkanet.

**Quinine Hair Tonic (Typical Formula).**

Quinine sulphate..... 1 dram  
 Tincture of cantharides... 2 ounces  
 Bay rum..... 4 ounces  
 Glycerin..... 2 ounces  
 Water..... 4 ounces  
 Dissolve the quinine in the alcoholic liquids, add the glycerin and water and filter. A pleasing perfume may be added.

**Eau de Quinine.**

Florentine orris root, powdered..... 4 ounces  
 Clove, powdered..... 10 grains  
 Nutmeg, powdered..... 5 grains  
 Sandalwood, powdered.... 20 grains  
 Alcohol..... 18 fl. ounces  
 Distilled water..... 6 fl. ounces  
 Macerate for 7 days, filter, and add—  
 Quinine sulphate..... 40 grains  
 Cologne water..... 1 fl. ounce  
 Oil of lavender flowers... 4 minims  
 Oil of rose geranium..... 7 minims  
 Glycerin..... 1½ fl. ounces  
 Oil of orange flowers..... 4 minims

The oils are dissolved in a small quantity of alcohol before being added with the other ingredients to the tincture first prepared. Should a brighter color be desired, it is recommended to add a small portion of a mixture of equal parts of tincture of cochineal and tincture of red saunders.

**Eau de Quinine, Pinaud.**

Cognac..... 1 pint  
 Good cologne water..... 2 ounces  
 Spirit, 95 per cent..... 2 ounces  
 Soap tincture..... 1 ounce  
 Tincture of cinchona..... 1 ounce  
 Peru balsam..... ¼ ounce  
 Oil of bergamot..... 1 dram  
 Fresh oil of sweet orange. 1 dram  
 Best oil of geranium..... 15 drops  
 Tincture of cantharides... ½ ounce

The whole colored red with cochineal or alkanet.

Mix well, let stand a week and filter.

**Eau de Quinine.**

Quinine bisulphate.....	½ ounce
Vinegar of cantharides.....	2½ ounces
Spirit of rosemary.....	18 ounces
Lavender water.....	8 ounces
Glycerin of borax.....	1 ounce
Glycerin.....	14 ounces
Distilled water.....	80 ounces
Burnt sugar, sufficient to color.	

Mix and dissolve.

**Eau de Quinine.**

Quinine sulphate.....	10 grains
Tincture of cantharides.....	1 dram
Glycerin.....	1 ounce
Alcohol.....	6 ounces
Tincture of rhatany.....	2 drams
Spirit of lavender.....	1 ounce

Mix and filter through talc.

**Eau de Quinine.**

Castor oil.....	10 drams
Balsam peru.....	3 drams
Jamaica rum.....	12½ ounces
Distilled water.....	6 ounces
Tincture of cinchona.....	1½ ounces
Cologne water.....	1½ ounces

Mix and filter through talc.

**Eau de Quinine.**

Powdered cinchona bark.....	1 ounce
Cochineal, powdered.....	½ dram
Potassium carbonate.....	½ dram
Alcohol.....	3 ounces
Perfume, as desired.	
Water.....	1 pint

Macerate for one week and filter.

**Eau de Quinine.**

Quinine hydrochloride.....	20 grains
Glycerin.....	1 ounce
Eau de cologne.....	2 ounces
Bay rum.....	2 ounces
Rose water, enough to make	1 pint

Dissolve the quinine in the cologne and bay rum, add the other ingredients and filter.

**Eclectic Hair Tonic.**

Castor oil.....	1 ounce
Oil of bergamot.....	40 drops
Glycerin.....	3½ fl. ounces
Tincture of cantharides.....	4 fl. drams
Ammonia water.....	4 fl. drams
Alcohol, enough to make.....	1 pint

Dissolve the oils in alcohol, add the tincture, and gradually add the ammonia mixed with the glycerin.

**Excelsior Hair Tonic.**

Castor oil.....	2 fl. ounces
Oleo-balsamic mixture.....	3 fl. ounces
Tincture of cantharides.....	3 fl. drams
Benzoic acid.....	135 grains
Tannic acid.....	1½ drams
Alcohol.....	8 fl. ounces

Mix and filter.

**Family Hair Tonic.**

Castor oil.....	1 pint
Alcohol.....	6½ pints
Tincture of cantharides.....	½ pint
Oil of lavender.....	½ ounce
Oil of rosemary.....	½ ounce
Oil of cloves.....	1 ounce
Oil of bergamot.....	2 ounces
Powdered alkanet root.....	1 ounce

Mix the oils, tincture and alcohol in a gallon bottle, put the alkanet root on a filter (or pack in a funnel) and pour on the alcoholic mixture until the color has all been discharged, then add the alcohol to complete the quantity directed.

**Florentine Hair Tonic.**

Alcohol.....	12 ounces
Castor oil.....	2 ounces
Tincture of cantharides.....	1 ounce
Tincture of orris root.....	1 ounce
Oil of cloves.....	20 minims
Oil of lemon.....	20 minims
Oil of bergamot.....	1 dram

Color, if desired, with a little tincture of alkanet root. Apply a teaspoonful or two, and rub well into the roots of the hair.

**French Hair Tonic.**

(Esprit de Cheveux.)

Oleo-balsamic mixture.....	4 fl. ounces
Glycerin.....	5 fl. ounces
Rose water.....	20 fl. ounces
Tincture of cantharides.....	½ fl. ounce
Carbonate of ammonia.....	1 ounce

Mix, shake thoroughly, let it stand for 1 hour, and filter.

**Glycerin Hair Tonic.**

Glycerin.....	1 quart
Borax.....	1 ounce
Rose water.....	2 quarts
Alcohol.....	4 ounces
Oil of petit grain.....	2 drams
Oil of cloves.....	2 drams
Rosemary oil.....	4 drams

Dissolve the borax in the water, the perfume in the alcohol, and mix all together. It should be clear. Color yellow, if desired, with saffron tincture.

**Jaborandi Tonic Hair Wash.**

Glycerin.....	2 ounces
Jaborandi leaves.....	4 drams
Cinchona bark.....	1 ounce
Alcohol.....	2 ounces
Bay rum.....	2 ounces
Rose water.....	10 ounces

Coarsely powder the jaborandi and cinchona; percolate with the alcohol, bay rum, and rose water mixed; add the glycerin to the percolate.

**Jaborandi and Quinine Hair Tonic.**

Quinine sulphate.....	20 grains
Tincture of jaborandi.....	1 ounce
Glycerin.....	1 ounce
Cologne water.....	2 ounces
Bay rum.....	2 ounces
Rose water.....	11 ounces

Dissolve the quinine in the tincture, add all and filter.

**Landerer's Hair Tonic.**

Cloves.....	2½ drams
Laurel leaves, in coarse powder.....	5 drams
Digested with Alcohol.....	6 ounces
Rose water.....	3 ounces
Glycerin.....	2½ drams
Mix. After 24 hours, add Ether.....	½ ounce
Oil of lavender.....	5 drops
Filter.	

**O. K. Hair Tonic.**

Powdered borax.....	¼ ounce
Tincture of cantharides.....	½ ounce
Aromatic spirit of ammonia.....	½ ounce
Glycerin.....	2 ounces
Bay rum.....	2 ounces
Sage tea, to make.....	1 pint
Extract Japanese lilac.....	1 dram

Take 1 ounce of sage and steep 1 hour in a pint of soft water, filter, dissolve the borax in the tea, then add the other ingredients.

**Pilocarpine Hair Tonic.**

Pilocarpine nitrate.....	2 grains
Quinine hydrochloride.....	8 grains
Glycerin .....	2 ounces
Rose water.....	6 ounces

Mix and dissolve. Filter.

**Quinine Hair Tonic.**

Quinine sulphate.....	½ dram
Alcohol .....	2 ounces
Tincture of cantharides...	1 dram
Tincture of capsicum.....	½ dram
Ammonia water.....	4 drams
Glycerin .....	1 ounce
Bay rum, to make.....	6 ounces

Dissolve the quinine in the alcohol, add the other ingredients, shake and filter.

**Compound Quinine and Glycerin Hair Tonic.**

Cologne .....	2 ounces
Quinine sulphate.....	15 grains
Tincture of cantharides...	2 drams
Borax .....	1 dram
Ammonia water.....	1 dram
Glycerin .....	3 ounces
Tincture of saccharum....	1 dram
Bay rum, to make.....	1 pint

Mix and filter.

Tincture of saccharum (caramel) in the above formula is thus made:

White granulated sugar....	1 pound
Hot water.....	1 pint

Put the sugar (without water) into an iron kettle several times the capacity required of it. Heat as long as any vapor is given off, and until it is changed to a black, viscid mass, stirring it occasionally, then cool, and while cooling add the hot water, strain the solution, and concentrate by evaporation to a syrupy consistency, or to 1 pint.

**Tar Hair Tonic.**

Glycerite of tar.....	2 ounces
Tincture of cantharides...	1 dram
Oil of lavender.....	1 dram
Spirit of ammonia.....	1 dram
Bay rum.....	4 ounces
Cologne water, sufficient to make .....	1 pint

**Lime and Glycerin for the Hair.**

Benne oil.....	16 ounces
Lime water.....	24 ounces

Put the oil in a large mortar, and gradually add the lime water, using an egg beater, and thoroughly mixing them. Perfume with ½ ounce of a mixture of

Oil of bergamot .....	8 drams
Oil of lemon .....	4 drams
Oil of lavender .....	2 drams
Oil of cloves .....	1 dram

This preparation is put up in 4-ounce bottles, and closed with corks which have been soaked a short time in an alcoholic solution of corrosive sublimate, 1 grain to the ounce, to prevent mold.

**Falling of the Hair.**

Distilled witch hazel.....	5 ounces
Corrosive sublimate.....	15 grains

Use on the scalp twice a day.

**Falling of the Hair.**

Oleic acid.....	2 ounces
Spirit of lavender.....	2 drams
Cologne .....	2 ounces

Apply to the scalp.

**Falling of the Hair.**

Tincture of nux vomica..	1 ounce
Spirit of rosemary.....	2 ounces
Alcohol .....	2 ounces

Apply several times a day.

**Falling of the Hair.**

Tincture of jaborandi.....	½ ounce
Lanolin .....	3 drams
Glycerin .....	2 ounces

Mix (by the aid of a little soft soap). A little to be rubbed in every night.

**Falling of the Hair.**

Corrosive sublimate.....	1½ grains
Glycerin .....	1½ ounces
Cologne .....	1½ ounces

Dissolve the sublimate in the cologne, add the glycerin and mix. To be applied at night with a soft sponge.

**Loss of Hair.**

Quinine sulphate.....	½ dram
Chloral hydrate.....	½ dram
Camphor .....	½ dram
Oil of cajuput .....	1 dram
Oil of bay .....	1 dram
Alcohol, enough to make..	8 ounces

Rub the chloral and camphor together, dissolve the quinine in the alcohol, add the oils, and mix together. Apply a small quantity to the scalp three times a week.

**General Thinning and Loss of Hair.**

Corrosive sublimate.....	10 grains
Glycerin .....	2 fl. drams
Bay rum.....	4 fl. ounces
Oil of geranium.....	16 minims
Water, enough to make..	½ pint

Dissolve the corrosive sublimate in the bay rum, add the other ingredients, and filter through talc.

**General Thinning and Loss of Hair.**

Boric acid.....	2 drams
Glycerin .....	2 ounces
Brandy .....	4 ounces

Dissolve and filter.

**Hair Lotion.**

Tincture of capsicum .....	½ ounce
Tincture of soap-tree bark	1 ounce
Glycerin .....	2 drams
Tincture of cantharides...	3 drams
Spirit of rosemary.....	1½ ounces
Rose water, enough to make .....	8 ounces

Use on hair night and morning.

**Tonic Hair Wash.**

Alcohol .....	92 parts
Glycerin .....	8 parts
Tannic acid.....	4 parts

Perfume to suit.

**Lacock's Hair Lotion.**

Expressed oil of nutmeg...	½ ounce
Olive oil.....	2 ounces
Stronger ammonia water..	2 ounces
Spirit of rosemary.....	4 ounces
Rose water, enough to make .....	2 pints

Gradually pour the combined oils, with constant stirring, into the stronger ammonia water, previously diluted with the spirit, and afterwards slowly incorporate the rose water.

**Nux Vomica Hair Lotion.**

Tincture of nux vomica...	4 drams
Tincture of cantharides...	2½ drams
Lanolin .....	2½ drams
Acetic acid.....	4 drams
Rose water, enough to make .....	6 ounces

Rub the lanolin with the tinctures, then add the acetic acid finally the rose water.



**Hair Wash.**

Borax .....	2 drams
Bitter almond water.....	3 drams
Orange flower water.....	5 drams
Rose water.....	5 ounces
Olive oil.....	6 ounces

Dissolve the borax in the rose water, add the other ingredients. Shake well before using.

**Hair Wash.**

Spirit of ether.....	2 fl. ounces
Tincture of benzoin.....	1½ fl. ounces
Vanilla .....	1 grain
Heliotropin .....	3 grains
Oil of geranium.....	1 minim

**Mix.**

One tablespoonful of the wash should be rubbed with a towel. If the hair become too dry, lanolin pomade should be used.

**Hair Wash.**

Alkaline lotion to be used for one week.

Borax .....	1 dram
Glycerin .....	2 drams
Tincture of cantharides....	6 drams
Ammonia water.....	1 av. ounce
Oil of bay.....	4 drops
Water, to make.....	6 av. ounces

Acid lotion to be used after the alkaline.

Aromatic vinegar.....	2 drams
Glycerin .....	2 drams
Alcohol .....	1 av. ounce
Blistering liquid, Ph. Br....	1 dram
Orange flower water.....	2 av. ounces
Rose water, enough to make .....	6 av. ounces

**Hair Wash.**

Aromatic spirit of ammonia	1 ounce
Tincture of cantharides 1 or 2	2 drams
Glycerin .....	½ ounce
Rosemary water.....	11 ounces

An active stimulant for the scalp.

**Brunel's Hair Wash.**

Salicylic acid.....	40 grains
Tincture of benzoin.....	½ dram
Alcohol .....	8 ounces
Glycerin .....	8 ounces

**Mix.****Saponaceous Hair Wash.**

Soft soap.....	1 ounce
Liquor potassa.....	2 ounces
Alcohol .....	2 ounces
Perfume, quantity sufficient.	
Water .....	1 pint

Dissolve the soap by the aid of heat in water; then add the solution of potash, and when cold, the spirit and perfume.

**Saponaceous Hair Wash.**

Soft soap.....	½ ounce
Diluted alcohol.....	1 ounce
Oil of rosemary .....	25 minims
Oil of lavender .....	8 minims

Dissolve and add

Water .....	8 ounces
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Mix and filter.

**Nettle Hair Wash.**

Fresh common nettle.....	4 ounces
Alcohol .....	8 ounces

Chop the nettles fine and macerate for a week, strain, press and add

Balsam peru.....	5 drops
Oil of bergamot .....	5 drops
Essence of musk.....	5 drops
Oil of rose .....	3 drops

Mix and filter.

**Liquid Soap for the Scalp.**

Dissolve 80 grams each of sodium hydroxide and potassium hydroxide in 500 c.c. of water, add 500 c.c. of alcohol, and then 1 liter of cottonseed oil in small portions, with violent shaking. Allow to stand with frequent agitation until saponification is complete, then add 2 liters of water, 30 grams of potassium carbonate, and 21 c.c. of terpineol. The soap may be colored green with "evergreen A".

**Hair Wash in Seborrhoea Capitis.**

(Particularly in women with long hair.)

Spirit of ether.....	1,000 parts
Benzoin tincture.....	100 parts
Vanillin .....	1 part
Heliotropin .....	3 parts
Geranium oil.....	2 parts

Use externally. Pour a tablespoonful on the head once a day, after washing (or without previously washing), and rub in with a fine cloth. (Inflammable.)

**Arnica Hair Wash.**

Elder water.....	½ pint
Sherry wine.....	½ pint
Tincture of arnica.....	½ fl. ounce
Spirit of ammonia.....	1 fl. dram

Mix and filter.

**Hair Wash Powder.**

Borax .....	1 ounce
Powdered camphor.....	½ dram
Oil of rosemary.....	10 drops

Mix. To make 1 pint.

**Hair Wash Powder.**

Powdered soap bark.....	20 grains
Powdered borax.....	2 drams
Powdered camphor.....	10 grains
Oil of rosemary.....	3 drops

Mix. Sufficient for a quart of wash.

**Hair Wash Powder.**

Powdered borax.....	3 ounces
Dried carbonate of sodium	3 ounces
Oil of rosemary.....	15 drops

Mix. A tablespoonful is enough for a quart of water.

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**SHAMPOOS.**

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Shampoos are preparations containing a little free alkali or soap or quillaja and are most effective when freshly prepared. They are often colored yellow by adding a little saffron, to give them the appearance of egg shampoos. If they are simply perfumed aqueous solutions of soap, a little alcohol should be added to keep the solution from gelatinizing. The name "dry shampoo" is usually applied to a shampoo that contains much alcohol; such preparations leave the hair very dry, and in most cases, after using, a good hair oil should be applied.

**Shampoo Liquid.**

Soft soap.....	1½ ounces
Potassium carbonate.....	2½ drams
Alcohol .....	3 fl. ounces
Essence of jockey club....	½ fl. ounce
Water, enough to make...	25 fl. ounces

Mix well and filter.

**Shampoo Mixture.**

Fluidextract of soap-bark.	2 fl. ounces
Cologne .....	1 fl. ounce
Bay rum .....	1 fl. ounce
Glycerin .....	1 fl. ounce
Water .....	12 ounces

Add water last.

**Shampoo Liquid.**

Solution of potassa.....	4 fl. ounces
Borax .....	1 ounce
Bay rum.....	1/2 fl. ounce
Tincture of quillaja.....	1/2 fl. ounce
Water, enough to make...	16 fl. ounces

Scent with any desired odor.

**Shampoo Liquid.**

Fluidextract of soap bark.	5 fl. ounces
Glycerin .....	2 1/2 fl. ounces
Cologne water.....	5 fl. ounces
Alcohol .....	10 fl. ounces
Rose water.....	15 fl. ounces

Mix.

**Shampoo Liquid.**

Soft soap.....	1 ounce
Solution of potassa.....	1 ounce
Alcohol .....	2 ounces
Cologne .....	2 ounces
Water, enough to make...	1 pint

Mix.

**Shampoo Liquid.**

Ammonia water.....	1 ounce
Cologne water.....	1 ounce
Soft soap.....	4 drams
Alcohol .....	6 ounces
Water, enough to make...	1 pint

Dissolve soap in alcohol, add the other ingredients and filter.

**Shampoo Liquid.**

Ammonium carbonate.....	1/2 ounce
Borax .....	1 ounce
Perfume .....	1/4 ounce
Alcohol .....	2 ounces
Water .....	1 1/2 pints

Dissolve the salts in the water and add the other ingredients.

**Shampoo Liquid.**

Potassium carbonate.....	1 ounce
Ammonia water.....	2 ounces
Tincture of cantharides....	1 ounce
Tincture of capsicum.....	1/2 ounce
Alcohol .....	10 ounces
Water, enough to make...	3 pints

Dissolve, mix, perfume and filter.

**Shampoo Cream.**

Soap (fine, white, in shreds), 1/2 ounce, rose water, 1 fluid ounce, ammonia water, 1 fluid ounce, alcohol or bay rum, 1/2 fluid ounce, rain water, 8 fluid ounces. Dissolve the soap in the rain water by heat, and when nearly cool add the ammonia, rose water and alcohol, stirring constantly.

**Shampoo Liquid.**

Fluidextract of quillaja...	2 ounces
Cologne water.....	2 ounces
Glycerin .....	1 ounce
Alcohol .....	3 ounces
Rose water.....	8 ounces

Mix and filter.

**Shampoo, Liquid.**

Ammonium carbonate.....	2 drams
Alcohol .....	2 ounces
Glycerin .....	1 ounce
Rose water, enough to make	1 pint

Dissolve, mix and filter.

**Dry Shampoo.**

Borax .....	4 drams
Ammonium carbonate.....	4 drams
Tincture of senega.....	1 dram
Essence of ratafia.....	10 drops
Rectified spirit.....	5 ounces
Water, enough to make...	1 pint

Mix. This may be used without water.

**Dry Shampoo.**

White castile soap.....	1 dram
Oil of lavender.....	1 dram
Alcohol .....	8 ounces
Ammonia water .....	1 ounce

Dissolve the soap in the alcohol, add the oil and the ammonia and filter.

**Dry Shampoo.**

Ammonia water.....	1/2 ounce
Tincture of quillaja.....	2 ounces
Oil of bitter almond.....	10 drops
Alcohol .....	8 ounces

Mix and filter.

**Dry Shampoo.**

Potassium carbonate.....	2 drams
Ammonia water.....	1 ounce
Tincture of quillaja.....	1 ounce
Cologne water.....	8 ounces

Mix and dissolve, then filter.

**Egg Shampoo.**

Fresh eggs.....	3
Spirit of soap.....	1 1/2 fl. ounces
Potassium carbonate.....	160 grains
Ammonia water.....	160 drops
Oil of rose .....	2 drops
Oil of bergamot .....	2 drops
French geranium oil.....	1 drop
Almond oil.....	1 drop
Rose water.....	27 fl. ounces

Thoroughly beat the three eggs, and then dilute with the rose water. Then add the other ingredients.

**Egg Shampoo.**

Ammonia water.....	3 fl. drams
Cologne water.....	3 fl. drams
Alcohol .....	5 fl. ounces
Water .....	5 fl. ounces
Whites of eggs, as many as desired.	

The whites of eggs (about 2) are thoroughly beaten up previous to being mixed with the water and water of ammonia; the remaining ingredients are added in their order and the whole stirred briskly.

**Egg Shampoo.**

New England rum.....	15 ounces
Bay rum.....	10 ounces
Glycerin .....	1 ounce
Borax .....	2 ounces
Whites of two eggs.	

Difficulty may be experienced in dissolving 2 ounces of borax in the alcoholic liquids; it is recommended to incorporate the borax in fine powder with glycerin, and to add the bay rum and New England rum gradually and with constant stirring to the mixture. The white of egg is well beaten and added to the solution of borax, and the whole stirred thoroughly until an even mixture results.

**Egg Shampoo.**

Eggs .....	2
Glycerite of borax.....	1 ounce
Rose water.....	4 ounces
Salicylic acid .....	20 grains
Tincture of soap.....	2 ounces
Water, enough to make...	1 pint

Mix the eggs with the glycerite, add the rose water, then the tincture in which the salicylic acid is dissolved, then the water. Mix well.

**Elite Shampoo.**

Florida water.....	1 pint
St. Thomas bay rum.....	8 fl. ounces
Tincture of quillaja.....	4 fl. ounces
Rosemary water.....	4 fl. ounces
Glycerin.....	2 fl. ounces
Ammonium bicarbonate.....	1 ounce
Sodium borate.....	1 ounce
Tincture of cantharides..	1 fl. dram

To the rosemary water, in which has been dissolved the borax and ammonia, add the rest of the ingredients and mix thoroughly by agitation. The hair is moistened with the liquid and rubbed vigorously to produce a copious lather.

**Shampoo Paste.**

Castile soap, powdered....	4 ounces
Potassium carbonate.....	1 ounce
Water.....	6 ounces
Glycerin.....	2 ounces
Essence of musk.....	½ dram
Oil of lavender.....	8 drops
Oil of bergamot.....	8 drops

Mix the soap, potassium carbonate and water well, let stand 12 hours, heat gently, stirring and add the other ingredients. Stir. Cast in molds or boxes, before congealing.

**Tar Shampoo Jelly.**

Cocoonut oil.....	16 ounces
Potassium hydrate.....	2 ounces
Potassium carbonate.....	1 ounce
Oil of bergamot.....	30 drops
Oil of rose geranium.....	10 drops
Distilled water, sufficient.	

Melt the cocoonut oil in a porcelain or enameled iron dish; dissolve the caustic potash in 8 fl. ounces of distilled water, and gradually add under constant stirring to the hot oil, continuing the heat and stirring until saponification is complete. Discontinue the heat, and to the warm soap add the potassium carbonate dissolved in 4 fl. ounces of water, stir or beat until the paste is uniformly smooth, and finally incorporate the volatile oils. Other volatile oils or synthetic perfumes may be used.

**Tar Shampoo Paste.**

Almost any shampoo paste or jelly, like those given in the preceding formulas, may be converted into a tar shampoo jelly by adding oil of tar to the fat or fixed oil, as lard or grease, just before saponification. Some manufacturers, instead of making a soap for the base of the jelly by the saponification of a fat or fatty oil, use a manufactured soap to begin with, as, for instance, castile soap in shavings which, by the aid of heat and the addition of water, is made into a paste of the desired consistency. Into this base, made slightly alkaline by potassium carbonate or ammonia water, is then incorporated the other ingredients, such as perfume, etc. If a tar shampoo paste is wanted, an equal quantity of some good tar soap is substituted for part of the castile soap used as the base.

For the small manufacturer this method has its advantages, as it does away with the troublesome operation of making soap on a small scale. On the other hand, if considerable quantities of the shampoo jelly are to be made, it is much cheaper to secure the right kind of kettles, heating apparatus, etc., and do one's own saponifying, making the soap directly from the "raw material," as in the following formula which was worked out by an Era contributor several years ago.

Pine tar, 20 grams; linseed oil, 200 grams; caustic potash, 45 grams; alcohol, 20 grams; water, 225 grams. Heat the tar and oil to 60°C., dissolve the potash in the water, and gradually add the solution under constant stirring to the mixture of tar and oil. Con-

tinue the heat until thoroughly saponified, adding sufficient water to make a jelly of the desired consistency.

**Tar Shampoo Paste.**

White castile soap.....	12 ounces
Pine tar soap (any good medicinal brand).....	4 ounces
Potassium carbonate.....	4 ounces
Glycerin.....	8 fl. ounces
Oil of lavender flowers....	2 fl. drams
Oil of bergamot.....	½ fl. dram
Water, enough to make a creamy jelly.	

Cut the soap into fine pieces and heat it with 2 pints of water on a water bath until thoroughly softened, then add the potassium carbonate, and continue the heat until the latter is dissolved. Occasionally add hot water to make up that lost by evaporation. Then allow to cool somewhat, incorporate the oils, and then add enough water to reduce to a suitable creamy consistency.

**Tar Shampoo Liquid.**

Green or soft soap.....	12 ounces
Potassium carbonate.....	2 ounces
Oil of tar.....	2 fl. ounces
Alcohol.....	16 fl. ounces
Water, enough to make...	64 fl. ounces
Mix.	

**Tar Shampoo Liquid.**

Pine tar.....	2½ ounces
Raw linseed oil.....	27 fl. ounces
Caustic potash.....	6 ounces
Alcohol.....	3 fl. ounces
Water.....	30 fl. ounces

Heat the tar oil to 60°C., dissolve the potash in the water, mix with the alcohol, and add this solution gradually to the oil and tar mixture, stirring constantly meanwhile. Continue the heat until the oil and tar are thoroughly saponified, then add the water to make one-half gallon of liquid.

**Liquid "Sea Foam" for Barbers.**

Castor oil.....	4 fl. drams
Ammonia water.....	4 fl. drams
Ammonium carbonate.....	4 drams
Alcohol.....	16 fl. ounces
Water, enough to make...	32 fl. ounces

Dissolve the oil in the alcohol, add the ammonia water, then the ammonium carbonate dissolved in the water, and agitate the whole thoroughly. Oil of bay and tincture of curcuma may also be added.

For a shampoo liquid which has to be washed out of the hair by means of a stream of running water, the following is recommended:

Soap.....	4 ounces
Potassium carbonate.....	1 ounce
Alcohol.....	10 fl. ounces
Water, enough to make...	32 fl. ounces

Dissolve the soap in 20 fl. ounces of water by the aid of heat (restoring any loss of volume by adding more water); in the hot liquid dissolve the potassium carbonate, allow the mixture to cool somewhat, and then add the alcohol and enough water to make 32 fl. ounces. Perfume and color as desired.

**Shampoo Cream.**

Fine white soap.....	½ ounce
Rose water.....	1 fl. ounce
Ammonia water.....	1 fl. ounce
Alcohol or bay rum.....	½ fl. ounce
Soft water, enough to make	8 fl. ounces

Cut the soap into thin shreds, and dissolve in the soft water by the aid of heat; when cool, but not cold, add the ammonia water, and lastly the rose water and alcohol. Stir constantly while adding the other ingredients.



**Shampoo Jelly.**

Castile soap, in shavings.....	8 ounces
Potassium carbonate.....	1½ ounces
Water .....	12 ounces
Honey .....	2 fl. ounces
Glycerin .....	2 fl. ounces
Oil of lavender flowers....	10 drops
Oil of bergamot .....	22 drops

Heat the first three ingredients, preferably on a water bath, until a homogeneous mixture results; then add the honey and glycerin, and when cold, incorporate the oils. Should the mixture be too firm, warm it slightly and add a sufficient quantity of lukewarm water to reduce it to the proper consistency. Preserve in tightly-sealed containers. Costs about 11 cents per pound.

**Salicyline Shampoo.**

Rosemary water.....	18 fl. ounces
French rose water.....	8 fl. ounces
St. Thomas bay rum.....	6 fl. ounces
Ammonium carbonate.....	½ ounce
Sodium carbonate.....	½ ounce
Salicylic acid.....	1 dram

To the rosemary water, in which have been dissolved the borax and ammonia, add the rest of the ingredients and mix thoroughly by agitation.

The hair is moistened with the liquid and rubbed vigorously to produce a copious lather.

**Salicylic Acid Shampoo.**

Salicylic acid.....	1 dram
Glycerin .....	½ ounce
Alcohol, diluted.....	8 ounces
Oil of wintergreen .....	5 drops
Oil of rose .....	1 drop
Oil of neroli .....	1 drop

Mix and filter. Wash the head well with warm soapsuds, then with pure warm water, and dry it with a towel. Then pour 2 tablespoonfuls of the shampoo into a wine glass, fill with warm water, and apply the mixture thoroughly by means of a small sponge to the scalp and hair.

**Sea Foam Liquid Shampoo.**

Bay rum.....	2½ pints
Water .....	½ pint
Glycerin .....	1 ounce
Tincture of cantharides...	2 drams
Ammonium carbonate.....	2 drams
Borax .....	½ ounce

Dissolve the salts in the water, add the other ingredients and filter.

**Sea Foam (Dry Shampoo).**

Ammonium carbonate.....	1 dram
Potassium carbonate.....	2 drams
Tincture of cantharides...	1 ounce
Water .....	5 ounces
Jamaica rum.....	1 pint
Alcohol, enough to make..	2 pints

Dissolve and filter.

**Sea Foam (Dry Shampoo).**

Alcohol .....	7 ounces
Water .....	10 ounces
Ammonia water.....	1 ounce
Cologne .....	1 ounce
Tincture of green soap...	4 drams

Use as a shampoo and wash off with clear water.

**Sea Foam Shampoo.**

Mix together 2 ounces glycerin, 2 drams aromatic spirit of ammonia, 4 ounces alcohol, and make up the measure to 1 pint with water.

**Sea Foam.**

Glycerin .....	1 ounce
Ammonia water.....	2 ounces
Alcohol .....	16 ounces
Water, enough to make...	32 ounces

Mix and filter.

**Sea Foam.**

Tincture of arnica .....	1 dram
Tincture of cantharides ..	2 drams
Ammonia water.....	3 drams
Alcohol .....	½ pint
Soft water.....	½ pint

Mix and filter.

**Sea Foam (Extra Soapy).**

Potassium carbonate.....	½ ounce
Powdered castile soap....	1 ounce
Water .....	8 ounces
Tincture of quillaja.....	1 ounce
Oil of bay.....	5 minims
Alcohol, enough to make..	1 pint

Dissolve the carbonate and soap in the water, add the other ingredients, let stand 24 hours, shaking often and filter.

**Snow-Drift Shampoo.**

Potassium carbonate.....	3 ounces
Ammonia water.....	1 ounce
Soap bark.....	4 ounces
Orange flower water.....	1 pint
Soft water.....	7 pints

Boil the soap bark with the water and filter or strain. When cold add the carbonate of potash and orange flower water, and finally the ammonia water.

**Tonic Shampoo.**

Tincture of quillaja.....	10 fl. ounces
Eau de cologne.....	4 fl. ounces
Glycerin .....	3 fl. ounces
Fluidextract of pilocarpus.	4 fl. drams
Quinine sulphate.....	30 grains
French orange flower water, enough to make..	2 pints

Dissolve the quinine in the eau de cologne and tincture of quillaja with the aid of heat; then add the remaining ingredients and filter if necessary.

**Shampoo Powder.**

Borax, fine powder.....	1½ ounces
Soda, calcined.....	3 ounces
Quillaja .....	1½ ounces
Perfume, q. s.	

Mix. To use, dissolve in warm water.

**Shampoo Powder.**

Dried sodium carbonate....	1½ drams
Powdered castile soap....	1½ drams
Perfume .....	.5 to 10 drops

Mix. This powder is for a pint of warm water.

**Shampoo Powder.**

Powdered borax .....	1 pound
Powdered camphor .....	1 dram
Oil of bergamot.....	½ dram

Mix intimately. Put up in packages of ¼ ounce each.

**Balsamic Shampoo.**

Rosemary leaves.....	2 ounces
Castile soap.....	½ ounce
Ammonium chloride.....	1 dram
Potassium carbonate.....	6 drams
Red saunders.....	1 dram
Water .....	2 pints

Boil the rosemary, soap and red saunders in the water for ½ hour. Then add the other ingredients, dissolve, stir well and strain when cool. Any perfume may be added before straining.

**Shampooing Water.**

Beat up the yolk of a fresh egg with 10 ounces of rose water, and add—

Liquid soap.....	½ ounce
Potassium carbonate.....	1 dram
Ammonia water.....	1 dram
Perfume, as required.	

This should be freshly prepared.

**Hair Wash Powder.**

Fluidextract of quassia... 1 ounce  
 Borax ..... 1 pound  
 Mix the fluidextract with 2 ounces of borax, heat gently until dry, then add the remainder of the borax and mix. A tablespoonful is sufficient for a quart of water.

**Carbolic Hair Wash Powder.**

Powder (preceding formula) .....	1 pound
Carbolic acid.....	2 drams
Mix intimately.	

**Shampoo Powder for dry use.**

Powdered orris..... 6 ounces  
 Fullers' earth..... 6 ounces  
 Arrowroot starch ..... ½ ounce  
 Oil of lavender..... 1 dram  
 Mix well. Use dry by rubbing the hair well with it at night. Remove in the morning with a fine comb.

**Shampoo Powder for dry use.**

Corn flour..... 8 ounces  
 Powdered borax..... 1 ounce  
 Carbonate sodium, dry... 1 ounce  
 Perfume, to suit.  
 Mix well and sift. Put on the hair at night and remove by vigorous brushing in the morning.

**POMADES.****Brilliantine Pomade.**

Melt together on a water bath 6 ounces suet and 4 ounces clear amber resin. While liquid (at about 80°C.) add a solution of 5 ounces caustic soda (40°B.) in 10 ounces alcohol. Heat in a large vessel until a transparent soap is formed. In another vessel heat 8 pounds vaseline in 10 pounds castor oil, and add by portions 20 ounces of the soap mass and 3 quarts rectified spirit. Heat the whole till bubbles rise, pour out, color with gamboge, and perfume with 3 ounces oil of sweet orange or any other perfume.

**Cacao Cream.**

Oil of theobroma .....	16 ounces
Castor oil.....	96 ounces
Oil of bergamot .....	6 drams
Oil of lemon .....	1½ ounces
Oil of citronella .....	1½ drams
Oil of lavender .....	4 drams
Cologne spirit, 95 per cent	64 ounces

Melt the oil of theobroma, warm the castor oil, and mix. Dissolve the essential oils in the cologne spirit. Fill the bottles 2/3 full with the first mixture, and fill the balance of bottle with the perfumed spirit. An elegant dressing for the hair.

**Crystallized Pomade.**

Olive oil.....	9 ounces
Spermaceti .....	1 ounce
Oil of bergamot .....	1 dram
Oil of cloves .....	3 drops
Oil of cinnamon .....	5 drops
Oil of neroli .....	5 drops

Dissolve the spermaceti in the olive oil by the aid of heat. Place the bottles up to the neck in water as hot as they will bear. Then fill with the pomade, adding the perfume immediately before pouring out. Cover the bottles as soon as they are filled, and do not disturb them until the pomade is perfectly solid. It may be colored with palm oil or oleaceous annatto coloring. The latter can be made by digesting 1 ounce of the seeds in 8 ounces of olive oil.

**Crystalline Pomade.**

Melt 6 ounces of spermaceti, add 32 fluid ounces of oil of sweet almond, and warm together. Then add one-half ounce of essence of lemon, 25 minims of oil of cloves, 2 fluid drams of oil of rose geranium, one-half fluid ounce of oil of bergamot, and cool slowly.

**Benzoated Pomade.**

Benzoated lard.....	2 pounds
Oil of rose.....	5 drops
Oil of orris.....	2 drops
Cumarin .....	1 grain
Alkannin .....	8 grains
White wax.....	2 ounces

Melt with a gentle heat the lard and wax, rub the alkannin and cumarin with a small portion of the mixture, add the perfumes, stir and allow to cool. If put in jars or bottles, it should be poured in just before hardening.

**Household Pomade.**

Vaseline oil.....	24 ounces
White ceresine.....	8 ounces

Melt together, and perfume with  
 Oil of bergamot ..... 80 minims  
 Oil of lemon ..... 15 minims  
 Oil of cloves ..... 15 minims  
 Oil of bitter almond..... 30 minims

**Ideal Pomade.**

Lanolin, 4 ounces; prepared lard, 1 ounce; rose water, 1 ounce; attar of rose, 10 drops; borax, 1 dram.

Melt the lanolin and lard, dissolve the borax in the water, add, stir, add the perfume.

**Lanolin Pomade.**

Lanolin .....	16 ounces
Oil of theobroma.....	1½ ounces

Melt together and add:

Tincture of benzoin.....	1 ounce
Perfume, a sufficiency.	

Stir and bottle.

**Macassar Pomade.**

Castor oil.....	10 ounces
Suet .....	2 ounces
Spermaceti .....	1 ounce
Oil of nutmeg .....	½ dram
Oil of sweet marjoram.....	½ dram
Oil of rosemary .....	½ dram
Oil of rose .....	15 drops
Oil of rose geranium.....	10 drops
Alkanet root, sufficient.	

Melt the fats, digest the alkanet root in the liquid, then add the oils and mix. Stir till cold.

**Philicome Pomade.**

Wax .....	10 ounces
Rose oil.....	1 pound
Sweet almond oil.....	1 pound
Cassia oil,	
Jasmine oil,	
Tuberose oil, of each.....	½ pound
Oil of orange, essential....	1 dram

Dissolve the wax in the rose and almond oil, and add the other oils as it cools, stirring all the time. ("Oil of jasmine" is an alcoholic tincture made from the pomade.)

#### Quinine Pomade.

Lard .....	16 ounces
Almond oil.....	4 ounces
Marrow .....	20 ounces
Balsam peru.....	2 drams
Powdered cinchona.....	2 drams
Oil of cloves.....	2 drams
Otto of rose.....	20 drams

Digest the cinchona with the fats over a water bath for twelve hours, strain through muslin, and add the balsam and oils.

#### Marrow Pomade.

Beef marrow.....	2 ounces
Beef suet.....	1 ounce
Palm oil.....	1 ounce

Heat on a water bath and perfume suitably.

#### Marrow Pomade.

Almond oil.....	4 ounces
Marrow .....	2½ ounces
Oil of rose .....	5 drops
Oil of orange .....	5 drops
Oil of lemon .....	3 drops

Heat on a water bath and add the perfumes when nearly cold.

#### Rose Pomade.

Lard .....	3 pounds
Spermaceti .....	3 ounces
Almond oil.....	3 ounces
Otto of rose.....	30 drops
Oil of rose geranium.....	30 drops
Oil of bitter almond.....	30 drops

Color with alkanet.

#### Royal Windsof Pomade.

Lard .....	2 pounds
Spermaceti .....	2 ounces
Wax .....	1 ounce
Cassia pomade.....	4 ounces
Olive oil.....	1 pound
Jasmine oil (French).....	3 ounces

Beat up well. Perfume:

Oil of bergamot .....	½ ounce
Oil of cloves .....	1 dram
Oil of cinnamon (Ceylon).....	¼ ounce

#### Strawberry Pomade.

Fresh, ripe strawberries...	4 parts
Fresh lard .....	25 parts
Fresh tallow .....	5 parts
Alkanet root, q. s.	
Oil of rose, q. s.	

The strawberries are put on a straining cloth, and the lard and tallow previously melted and heated to 100°C. (212°F.) and tinted with alkanet, poured over them. The strained mass is stirred until it begins to set, and for each 2 pounds of product 1 drop of oil of rose added.

#### Strawberry Pomade.

Suet .....	15 ounces
Lard .....	25 ounces
Cacao butter.....	40 ounces
Fresh strawberries.....	13 ounces
Otto of roses.....	2 drops
Oil of neroli.....	2 drops

Melt the fats in a water bath, and introduce the fresh strawberries. The temperature must be kept very low, only high enough to keep the mass liquid, otherwise the strawberry aroma will be lost. After digestion (that is, soaking) for several hours, strain, and when nearly cool add the essential oils.

#### Transparent Pomade.

Spermaceti .....	2 ounces
Castor oil.....	5 ounces
Alcohol .....	5 ounces
Oil of bergamot .....	½ dram
Oil of Portugal .....	½ dram

Melt together the spermaceti and castor oil, pour in the alcohol gradually, stop the heat and add the perfume. Stir well and pour into glass jars.

### SHAVING CREAMS.

#### Shaving Cream.

Castile soap.....	1 ounce
Rose water.....	4 ounces
Oil of almond.....	$\frac{1}{2}$ ounce
Theobroma oil.....	$\frac{1}{2}$ ounce
Tincture of benzoin.....	1 dram
Oil of rose geranium.....	5 drops
Oil of bitter almond.....	5 drops
Glycerin, quantity sufficient.	

Digest the soap and water on a water bath, add the 2 fixed oils (previously melted together), and incorporate the tincture. Finally, add the perfumes and enough glycerin to bring to the proper consistence.

#### Shaving Cream.

White soap.....	1 part
Rose water.....	4 parts
Dissolve with heat, and add to	
Almond oil.....	½ part
Spermaceti ointment.....	½ part

Mix in a warm mortar, and when it cools add glycerin and water, of each ½ part; perfume with bitter almond oil or lemon.

This is a good cream for collapsible tubes; a pleasing perfume should be mixed with the almond oil.

#### Shaving Cream.

Cacao butter.....	½ ounce
Oil of almond.....	½ ounce
Glycerin .....	1 ounce
Powdered white castile soap .....	½ ounce
Otto of rose .....	2 drops
Otto of neroli .....	4 drops
Oil of bitter almond.....	5 drops
Rose water to.....	8 ounces

Prepare as directed in the formula for "Brilliantine Pomade." If a harder cream is desired, the amount of cacao butter may be increased.

#### Aseptic Shaving Cream.

Hard paraffin (melting point 55°C.).....	22 parts
Prepared suet.....	3 parts
Soft soap.....	2 parts
Boiling water.....	68 parts

Place these materials in a vessel surrounded by boiling water, and when the fats are melted beat them together until a smooth, white emulsion is obtained. Continue the beating, maintaining the temperature above 70°C., and shake in gradually:

Powdered tragacanth..... 2 parts

When the mixture is homogeneous, allow it to cool by removing the boiling water, and when nearly cold add:

Glycerin .....	2 parts
Oil of lavender.....	1 part

This cream, known as Edmund White's improved formula ("Pharmaceutical Formulas") is for smearing the skin in ordinary toilet use, or in shaving any part of the body preparatory to surgical operations.



**Shaving Cream.**

Curd soap.....	2 ounces
Simple ointment.....	½ ounce
Oil of rose.....	15 minims
Oil of lavender.....	5 minims
Alcohol.....	1 ounce
Potassium carbonate.....	2 drams
Water, sufficient quantity.	

Dissolve the soaps in 10 ounces of water by the aid of heat. Melt the simple ointment and while warm mix with it the carbonate of potassium dissolved in an ounce of warm water; transfer to a warm mortar, gradually and steadily incorporate the warm soap solution, and continue to stir until a smooth paste is formed. With this incorporate the perfume dissolved in alcohol, diluted with an ounce of water.

If intended for collapsible tubes, the water should be reduced.

**Shaving Cream.**

Curd soap.....	8 ounces
Almond oil.....	2 ounces
Glycerin.....	1 ounce
Spermaceti.....	½ ounce
Potassium carbonate.....	¼ ounce
Water.....	16 ounces

Cut the curd soap into shreds and dissolve it by the aid of a water bath in 14 ounces of water. Dissolve the spermaceti in the almond oil, and while warm mix with it the glycerin, carbonate and remainder of the water; transfer to a warm mortar, gradually and steadily incorporate the warm soap solution and continue to stir until a smooth paste is formed. With this incorporate a suitable perfume.

**Shaving Cream.**

Almond oil.....	1 ounce
Common resin.....	2 drams
Potassium carbonate.....	1½ drams
White Windsor soap.....	1 ounce
Boiling water.....	5 ounces

Melt the resin in the oil by aid of heat. Separately dissolve the soap and carbonate in the water, and add the oil and resin to this, continuing to heat on a water bath until, after stirring well, the mixture is homogeneous; transfer to a warm mortar, stir and add:

Glycerin.....	6 drams
Essential oil of almond.....	10 drops
Oil of bergamot.....	30 drops
Rectified spirit.....	1 ounce
Rose water.....	6 ounces

Mix well, adding more rose water if required, when cold.

**Shaving Cream for Collapsible Tubes.**

Lard.....	7 pounds
Caustic potassa.....	1 pound
Water.....	3 pints
Glycerin, sufficient quantity.	
Perfume, sufficient quantity.	

Melt the lard in a porcelain vessel over a water bath; dissolve the potassa in the water, and run the lye formed, very slowly, into the melted grease, stirring thoroughly all the time, until saponification is completed. Then add the requisite perfume, and sufficient glycerin to render the mass thin enough to be adapted for use in tubes. The glycerin will aid in keeping the cream soft.

This is a good formula for manufacturing purposes.

**Shaving Cream, Superfatted.**

Cold cream.....	½ pound
Oil of neroli.....	5 drops
Oil of eucalyptus.....	10 drops
Almond cream.....	½ pound

Melt with a gentle heat and mix.

**Shaving Cream.**

Lanolin.....	½ ounce
Almond cream.....	10 ounces
Rose water.....	4 ounces
Cumarin.....	2 grains
Oil of ylang ylang.....	10 drops

Melt lanolin and cream, add the other ingredients and stir till cool.

**Menthol Cream for Barbers.****After shaving.**

Tragacanth.....	1 dram
Warm water.....	1 pint
Glycerin.....	3 drams
Alcohol.....	4 drams
Menthol.....	10 grains

This cream is applied as a cooling lotion after shaving, having first been diluted with aromatic water.

Macerate the tragacanth in the water for 24 hours, shaking often, strain, add the glycerin and the menthol dissolved in the alcohol, mix well and fill in bottles.

**Shaving Cream.**

Lanolin.....	½ ounce
Camphorated oil.....	½ ounce
Soft soap.....	1 pound
Oil of cinnamon.....	5 drops
Oil of bergamot.....	15 drops
Oil of bitter almond.....	10 drops

Put lanolin and oil in a warm mortar, stir, work in the soap in small quantities, finally add the perfumes. Put in collapsible tubes.

**Balsamic Shaving Paste.**

Lard, free from salt.....	1 pound
Cocanut oil.....	½ pound
Solution of potassa.....	10 ounces
Oil of peppermint.....	10 drops
Oil of bergamot.....	20 drops
Oil of lavender.....	15 drops
Oil of neroli.....	5 drops

Melt the fats on a water bath, mix in the solution of potassa previously warmed to the same temperature, stir till saponification is complete, add the oils and mix well.

**Shaving Paste.**

White soap.....	4 ounces
Spermaceti.....	½ ounce
Salad oil.....	½ ounce

Melt together and stir till cold. Scent at will. When properly applied, this paste produces a good lather with either hot or cold water, which does not dry on the face.

**Shaving Paste.**

Take Naples soap, 1 pound; Castile or Marseilles soap, ½ pound; honey, ½ pound; essence of ambergris, oils of cassia and nutmeg, of each 20 to 30 drops. Mix these ingredients well together in a mortar, adding a little rose water, until a perfectly homogeneous paste is formed.

**Shaving Paste.**

White castile soap.....	4 ounces
Spermaceti.....	½ ounce
Salad oil.....	½ ounce

Melt together and stir until cold. Scent at will. When properly applied, this paste produces a good lather with either hot or cold water, which does not dry on the face.

**Shaving Cream (Euxesis Style).**

Cacao butter.....	½ ounce
Almond oil.....	½ ounce
Glycerin.....	1 ounce
Soap, powdered.....	½ ounce
Oil of rose.....	4 drops
Oil of neroli.....	4 drops
Oil of bitter almond.....	5 drops
Water, a sufficiency.	

Pour the melted cacao butter and almond oil into a warm mortar, containing the soap rubbed down with 3 ounces of hot water; stir briskly, add slowly 4 ounces of water mixed with the glycerin; finally add the perfume.

**Shaving Soap Powder.**

Powdered curd soap.....	2 pounds
Cumarin.....	1 grain
Oil of bergamot.....	5 drops
Oleo-balsamic mixture.....	5 drops
Oil of wintergreen.....	2 drops

This powder can be made antiseptic by the addition of 3 per cent of salol.

**Shaving Powder.**

Powdered soap.....	8 ounces
Sodium carbonate.....	1 ounce
Wheat starch.....	2 ounces
Orris root.....	¼ ounce
Oil of bergamot.....	6 drops

Instead of the orris root, the same weight of powdered quillaja and a very little oil of orris may be used.

**Shaving Powder.**

Powdered soap.....	8 ounces
Powdered spermaceti.....	1 dram
Oil of bergamot.....	3 drops
Oil of wintergreen.....	1 drop
Cumarin.....	1 grain

Mix well.

**Shaving Powder, Antiseptic.**

Powdered soap.....	8 ounces
Starch.....	1 ounce
Sodium carbonate.....	½ ounce
Perfume, to suit.	
Salol.....	2 drams

Mix.

**After-shave Face Powder.**

Cornstarch.....	5 pounds
Precipitated chalk.....	3 pounds
Powdered talc.....	2 pounds
Oil of neroli.....	1 dram
Oil of citron.....	1 dram
Oil of orange.....	2 drams
Extract of jasmine.....	1 ounce

Mix thoroughly, and pass through a 100-mesh bolting cloth.

**Barber's Itch.**

Resorcin.....	1½ drams
Glycerin.....	3 drams
Rose water.....	½ ounce
Lac sulphur.....	½ ounce
Triple extract of lavender.....	½ ounce
Bay rum, enough to make.	4 ounces

Mix. Apply to parts affected with soft sponge twice a day.

**Barber's Itch.**

The seat of the affection to be closely shaved every day, and the following ointment rubbed in twice a day:

Tannic acid.....	45 grains
Sulphur precipitated.....	1½ drams
Zinc oxide.....	4 drams
Vaseline.....	1 ounce

In a month nothing remains of the eruption but a very slow disappearing erythema.

**Shaving Block.**

The transparent antiseptic shaving block, for rubbing on the skin after shaving, is potash alum, or fused boric acid.

**Razor-paste, Black.**

Blacklead.....	2 ounces
Mutton suet.....	3 ounces
Oil of bitter almond.....	2 drops

Mix well.

**Razor-paste, Red.**

Levigated ferric oxide....	2 ounces
Putty powder.....	½ ounce
Mutton suet.....	3 ounces
Oil of peppermint.....	2 drops

Mix well.

**Liquid Antiseptic for Razors.**

Instead of solutions containing phenol or metallic derivatives, M. Perin recommends the following liquid antiseptic for disinfecting razors and tools used by barbers:

Oil of wintergreen.....	30 grams
Tincture of quillaja.....	6 grams
Water.....	6 liters

The liquid has an agreeable odor, is non-toxic, non-irritating, and a powerful antiseptic.

## COMEDONES AND BLACKHEADS.

**Comedones, to Remove.**

Ether.....	1 fl. ounce
Ammonium carbonate.....	20 grains
Water, enough to make...	2 fl. ounces

Apply twice a day.

**Comedone Wash.**

Potassium carbonate.....	3 drams
Distilled water.....	3½ ounces
Oil of cinnamon.....	2 drops
Oil of rose.....	1 drop

To be used with a damp sponge for hypersecretion of fat from the skin. Useful in comedo and acne.

**Comedones (Unna).**

Solution of hydrogen peroxide.....	2 ounces
Vaseline.....	2 ounces
Lanolin (anhydrous).....	1 ounce
Acetic acid.....	1 dram

Mix and perfume.

**Comedones (Blondel's Formula).**

Bitmuth subnitrate.....	3 ounces
Boric acid, pulverized....	3 ounces
Rhatany, pulverized.....	1 ounce
Tragacanth, powdered....	2 ounces

A dusting powder.

**Blackheads.**

Thymol.....	10 grains
Boric acid.....	120 grains
Tincture of witchhazel....	1 fl. ounce
Rose water.....	4 fl. ounces

Mop it well over the surface twice daily.

**Blackheads.**

Zinc oxide.....	1 dram
Resorcin .....	1 dram
Starch .....	1 dram
Petrolatum (yellow).....	2½ drams

Apply a thin coating to the affected parts, letting it remain on 12 hours, and rub off with oil. It is best applied at bedtime.

**Blackheads and Pimples.**

Wash the face twice a day at least, using a loofah and soap liberally, and preferably a superfatted soap. Touch each spot with lano-creolin at bedtime. First thing in the morning take

Sodium tartrate.....	40 grains
Potassium chlorate.....	3 grains
Magnesium sulphate.....	30 grains
Peppermint water, enough to make.....	1 ounce

For 1 dose.

**Comedone Salve.**

Sulphur .....	1 dram
Glycerin .....	1 dram
Cold cream.....	1 ounce

Apply every night.

**Comedone Lotion.**

Precipitated sulphur.....	2 drams
Camphor .....	10 grains
Gum acacia.....	20 grains
Lime water.....	2 ounces
Rose water.....	2 ounces

Rub the camphor with a few drops of alcohol, add the sulphur and gum arabic. Then add slowly the waters. Shake well and apply at nights.

**Comedone Ointment.**

Oil of cade.....	½ dram
Benzoated lard.....	1 ounce

Apply at night.

**Comedone Ointment.**

Kaolin .....	1 ounce
Glycerin .....	½ ounce
Acetic acid.....	3 drams

Make a paste and apply at bedtime.

**Acne Salve.**

Sulphur .....	25 grains
Carbolic acid.....	10 drops
Potassium carbonate.....	25 grains
Lard .....	1 ounce

Mix, and make an ointment.

**Acne, Pimply.**

Wash the affected parts with warm suds; rub well, and frequently in so doing express the contents of the pimples and apply the following mixture:

Flowers of sulphur.....	25 grains
Spirit of camphor.....	1½ drams
Lime water.....	2½ ounces

**Acne Ointment.**

Bismuth subgallate.....	1 dram
Witchhazel water.....	1 ounce
Zinc oxide.....	2 drams
Vaseline .....	7 ounces

Mix in a mortar.

**Acne Ointment.**

Ammoniated mercury.....	1 dram
Camphor .....	½ dram
Peric acid.....	2 drams
Liquor carbonis detergens .....	2 drams
Lanolin .....	4 drams
Vaseline .....	2 ounces

Mix.

**Skin Ointment.**

(for pimples, etc.)

Birch tar oil.....	1 dram
Zinc oxide.....	2 drams
Lanolin .....	1 ounce

Mix.

**Skin Ointment.**

Ichthyol .....	1 dram
Powdered boric acid.....	1½ drams
Starch .....	1 ounce
Zinc oxide.....	1 ounce
Vaseline .....	2 ounces

Mix.

**Acne Salve.**

Precipitated sulphur.....	½ ounce
Betanaphthol .....	½ ounce
Soft soap.....	1 ounce
Lard .....	2 ounces

Mix intimately. Apply to skin and let remain 2 hours, then remove, wash and apply a dusting powder.

**Acne Salve.**

Zinc oxide.....	6 drams
Resorcin .....	1½ drams
Talcum powder.....	1 dram
Almond oil.....	2½ drams
Benzoated lard, enough to make .....	2 ounces.

Mix, apply at night. The resorcin may gradually be increased to 6 drams.

**Acne Lotion.**

Calamine, powdered.....	4 drams
Zinc oxide .....	2 drams
Glycerin .....	½ ounce
Lime water.....	4 ounces
Rose water, enough to make .....	8 ounces

Rub the calamine and zinc oxide in a mortar with the glycerin, add the waters and mix.

**Acne Lotion.**

Calamine .....	½ dram
Zinc oxide.....	20 grains
Boric acid, powdered.....	5 grains
Glycerin .....	½ dram
Rose water, enough to make .....	1 ounce

Mix.

**Local Application for Pimples.**

Rose water.....	8 ounces
Spirit of camphor.....	1 ounce
Sulphur, precipitated.....	2½ ounces
Acacia, pulverized.....	2 drams

Mix well, and apply at night.

**Pimples.**

Ointment of zinc oleate...	1 ounce
Ointment of rose water...	1 ounce
Camphor .....	10 grains

Apply on retiring for the night.

**Pimples.**

Betanaphthol .....	3 grains
Oil of chamomile.....	5 drops
Zinc oxide ointment.....	1 ounce

Use at night.

**Pimple Lotion.**

Zinc sulphate.....	2 drams
Potassa sulphuret .....	2 drams
Rose water .....	6 ounces

Dissolve the salts separately, each in 3 ounces of rose water, mix and stir till effervescence ceases. Apply twice a day.



**Pimple Lotion.**

Corrosive sublimate.....	8 grains
Tincture of benzoin.....	1 dram
Rose water.....	8 ounces

Dissolve and strain. Apply at night.

**Removal of Pigment Spots.**

Cacao butter.....	2¼ ounces
Castor oil.....	2¼ ounces
Zinc oxide.....	45 grains
Ammoniated mercury.....	2 grains
Oil of rose, sufficient quantity.	

To be applied night and morning.

**Plugs or Grubs of the Skin.**

Boric acid.....	½ dram
Spirit of rosemary.....	1 ounce
Water .....	3 ounces

Use with friction on the skin.

**Plaster for Removing Moles.**

Take tartar emetic in impalpable powder, 15 grains; soap plaster, 1 dram, and beat them to a paste. Apply this paste to nearly a line in thickness (not more), and cover the whole with strips of gummed paper. In 4 or 5 days the eruption or suppuration will set in, and in a few days leave in the place of the mole only a very slight scar.

**Red Nose Ointment.**

Sulphur .....	1 dram
Starch powder.....	2½ drams
Zinc ointment.....	1½ ounces
Oil of rose geranium.....	5 drops

Apply at bedtime.

**FRECKLES, SUNBURN, ETC.****To Remove Summer Freckles.**

White precipitate.....	4 drams
Bismuth subnitrate.....	4 drams
Glycerite of starch.....	15 drams

Apply every second day to the freckles.

**Freckles.**

Wash with the following lotion morning and evening:

Zinc sulphocarbonate.....	1 dram
Glycerin .....	2 ounces
Alcohol .....	1 ounce
Orange flower water.....	1 ounce
Rose water.....	6 ounces

Dissolve and mix.

**Freckle Lotion.**

Ammonium chloride.....	1 dram
Hydrochloric acid.....	1½ drams
Glycerin .....	1 ounce
Tincture of benzoin.....	1 dram
Rose water.....	1½ ounces

Mix and filter. Apply to the freckles morning and evening with a camel-hair brush.

**Freckle Lotion.**

Potassium cyanide.....	10 grains
Honey (pure).....	4 drams
Glycerin .....	2 drams
Rose water, enough to make .....	1½ fl. ounces

Apply night and morning.

**Freckle Lotion.**

Angelica root.....	1¼ ounces
Black hellebore root.....	1¼ ounces
Storax .....	¾ ounce
Oil of bergamot .....	150 grains
Oil of citron .....	150 grains
Alcohol .....	2 quarts

Macerate for a week, and filter.

**Eau des Princesses for Freckles.**

Potassium carbonate.....	1 dram
Spirit of camphor.....	1 dram
Tincture of benzoin.....	1 ounce
Essence of musk.....	10 minims
Distilled water.....	7 ounces
Eau de cologne to make...	30 ounces

Mix.

**Freckle Lotion.**

Borax .....	60 grains
Potassium chlorate .....	30 grains
Glycerin .....	2 fl. drams
Alcohol .....	1 fl. dram
Rose water, enough to make .....	3 fl. ounces

Apply with a soft sponge several times a day.

**Freckle Lotion.**

Rose water.....	4 ounces
Camphor .....	4 drams
Precipitated sulphur.....	2½ drams
Gum arabic.....	1 dram

Powder the camphor by means of a few drops of alcohol, add the sulphur and gum, mix well and gradually add the water. This remains a homogeneous mixture for a considerable length of time, and should the insoluble constituents separate, in the course of time the mixture may again be made uniform by gentle agitation.

**Freckle Lotion, Floral.**

Mercury bichloride.....	2 grains
Hydrochloric acid dilute.....	10 drops
Glycerin .....	2 drams
Rose water.....	1½ ounces
Extract of rose .....	2 drams
Extract of jasmine.....	2 drams
Extract of violet .....	1 dram

Mix the extracts with the glycerin and dissolve the bichloride in the acid and rose water. Mix the two solutions. Apply with a soft sponge at night.

**Hardy's Freckle Wash.**

Mercury bichloride.....	2 grains
Zinc sulphate.....	2 grains
Lead acetate.....	2 ounces
Distilled water.....	4 ounces

Mix and apply at night. Aromatic or perfumed waters may be used in place of the distilled water.

**Russian Remedy for Freckles.**

Zinc sulphocarbonate.....	1 dram
Oil of lemon.....	1 dram
Alcohol .....	5 drams
Collodion .....	45 drams

Mix. To be applied with a camel-hair brush.

**Freckle Lotion.**

(Eau des Princesses.)

Potassium carbonate.....	1 dram
Spirit of camphor.....	1 ounce
Tincture of benzoin.....	1 ounce
Essence of musk.....	10 drops
Distilled water.....	7 ounces
Eau de cologne, enough to make .....	2 pints

Dissolve the potassium carbonate in the water, add the other ingredients, let stand for a week and filter.

**Rose Freckle Solution.**

Zinc sulphocarbonate.....	½ dram
Glycerin .....	½ ounce
Alcohol .....	1 ounce
Tincture of cochineal.....	1 dram
Orange flower water.....	2 ounces
Rose water, to make.....	8 ounces

**Freckle Lotion (Buttermilk Lotion).**

Lactic acid.....	2 drams
Glycerin .....	½ ounce
Essence of rose.....	1½ drams
Tincture of benzoin.....	1 dram
Water, enough to make...	6 ounces

Mix the acid and glycerin, and the tincture and essence; then mix both solutions slowly and add the water.

**Bismuth Ointment for Freckles.**

Bismuth subnitrate.....	2 drams
Simple ointment.....	2 ounces

Apply to the skin at night and remove in the morning with a little cold cream previous to washing.

**Freckle Ointment.**

Flour of mustard.....	3 ounces
Lemon juice, enough to make a thick paste.	
Oil of almond.....	½ fl. ounce

This is a rather heroic treatment and the ointment should be removed if the pain becomes severe.

**Freckle Pomade.**

Elder flower ointment, 1 ounce; zinc sulphate (levigated), 20 grains; mix by trituration in a wedgewood mortar. The above applied night and morning, is excellent for either cold or summer freckles.

**Freckles and Yellow Discolorations of the Skin.**

Copper oleate.....	10 to 20 grains
Ointment of zinc oxide....	½ ounce
Rub into the spots, night and morning.	

**Freckles and Yellow Discolorations of the Skin.**

Corrosive sublimate.....	10 grains
Distilled witchhazel.....	2 ounces
Rose water.....	2 ounces

Mop over the spots.

**Freckle Milk.**

Camphor .....	1¼ ounces
Ammonium chloride.....	¾ ounce
Corrosive sublimate.....	150 grains
Albumen .....	3½ ounces
Rose water.....	2 pounds

Use with care. Mix the first three ingredients intimately in a mortar, add the albumen and mix again; finally add the rose water.

**Lait Virginal.**

Powdered tragacanth.....	6 grains
Glycerin .....	½ ounce
Rose water.....	9 ounces
Tincture of benzoin.....	2 drams

This leaves no greasy stains upon the skin. Mix the tragacanth with the tincture in a mortar, slowly add the glycerin, stirring constantly and finally the water.

**Freckle Ointment.**

Bismuth subnitrate.....	½ ounce
Glycerin .....	½ ounce
Lanolin .....	3 ounces
Oil of neroli.....	3 drops

Mix the lanolin and glycerin and incorporate the bismuth and oil.

**Freckle Ointment.**

Oleate of copper.....	1 dram
Vaseline .....	2 ounces
Oil of rose.....	2 drops

Mix.

**Freckle Lotion.**

(Lilionese.)

Potassium carbonate.....	2½ drams
Borax .....	½ ounce
Cologne water.....	1½ ounces
Rose water, enough to make .....	1½ pints

Dissolve, mix and filter after 2 days.

**Freckle Lotion (Pulcherine).**

Potassium carbonate.....	2 drams
Tincture of vanilla.....	½ ounce
Orange flower water, enough to make .....	1 pint

Mix, filter after 2 days.

**Rough, Pimply Neck and Limbs.**

Sublimed sulphur.....	1 dram
Oil of eucalyptus.....	5 drops
Ointment of zinc oxide....	1 ounce
Ointment of rose water...	1 ounce

Use once a day on the skin. Wash off the parts once or twice a week with a tincture of green soap, cleansing them with hot water, after which renew the application of the above ointment.

**Milkwash for Removing Sunburn and Freckles.**

Buttermilk (or sour milk)	4 ounces
Flowers of sulphur.....	2 drams
Oatmeal .....	1½ ounces

Make into a thin paste, spread between cheesecloth or thin muslin and apply at night.

**Milkwash for Removing Sunburn and Freckles.**

Buttermilk (or sour milk)	4 ounces
Grated horseradish.....	½ ounce
Corn meal.....	1½ ounces

Make into a thin paste, spread between cheesecloth or thin muslin, and apply to the face at night.

**Sunburn Wash.**

Ammonium chloride.....	1 dram
Cocaine hydrochloride....	12 grains
Glycerin .....	3 drams
Alcohol .....	3 ounces
Orange flower water.....	2 ounces
Rose water, enough to make .....	6 ounces

Mix. Very useful in painful sunburn.

**Sunburn Lotion.**

Salicylic acid.....	1 dram
Borax .....	3 drams
Rose water.....	4 ounces
Orange flower water.....	4 ounces
Cologne water.....	1 ounce
Tincture of benzoin.....	2 drams

Mix the cologne water and tincture of benzoin and salicylic acid; dissolve the borax in the waters, and add the two solutions. Let stand 24 hours and filter.

**Tan and Freckles, Chevasses.**

Rose water.....	6 ounces
Glycerin .....	½ ounce
Bitter almond water.....	2½ drams
Tincture of benzoin.....	2½ drams
Borax .....	1½ drams

Rub the borax with the glycerin, gradually adding the rose and almond water; lastly add the tincture of benzoin, agitating constantly. Apply night and morning.

**Sunburn Lotion.**

Hydrochloric acid.....	½ dram
Citric acid.....	2 drams
Glycerin .....	1 ounce
Essence of rose.....	1 dram
Alcohol .....	1 ounce
Water, enough to make....	8 ounces

Mix.

**Sunburn Lotion.**

Zinc oxide.....	½ ounce
Borax .....	2 drams
Glycerin .....	1 ounce
Extract of jasmine.....	½ ounce
Bay rum.....	1½ ounces
Water, enough to make....	10 ounces

Mix, apply with a soft sponge.

**Tan and Freckles.**

Potassium carbonate.....	3 drams
Sodium chloride.....	2 drams
Orange flower water.....	2 ounces
Rose water.....	8 ounces

Use as a lotion.

**To Prevent Wrinkles.**

Tannin, 1 ounce; glycerin, 2 fluid ounces; rose water, 5 fluid ounces. Applied with camel's hair brush.

**Wrinkles.**

Wrinkles caused by facial contractions cannot be removed while their cause continues in operation. Withering and puckering of the skin, the result of years, may be remedied by:

Alum .....	1 dram
Glycerin .....	1 ounce
Water .....	1 pint

To be used three times daily as a wash.

**Wrinkles.**

Glycerin .....	2 drams
Tannin .....	1 dram
Rectified spirit.....	1 dram
Water .....	4 ounces

To be used as a wash three times daily.

**Wrinkle Cream.**

White wax.....	2 av. ounces
Spermaceti .....	2½ av. ounces
Hydrous wool fat.....	7 av. ounces
Sweet almond oil.....	16 fl. ounces
Rose water.....	12 fl. ounces
Powdered borax.....	80 grains

Mix.

**Wrinkle Remover.**

White petrolatum.....	7 ounces
Paraffin wax.....	½ ounce
Lanolin .....	2 ounces
Water .....	3 fl. ounces
Vanillin .....	2 grains
Oil of rose.....	3 drops
Alcohol .....	1 fl. dram

Melt the paraffin, add the lanolin and petrolatum, and when these have melted, pour the mixture into a warm mortar and, with constant stirring, incorporate the water. When nearly cold, add the oil of rose and vanillin previously dissolved in a little alcohol. Preparations of this kind should be rubbed into the skin vigorously, as friction assists the absorbed fat in developing the muscles, and also imparts softness and fulness to the skin.

**Wrinkle Remover.**

Alum .....	1 ounce
Tannin .....	1 ounce
Glycerite of starch, enough make .....	8 ounces

Work together to a paste. Use on the wrinkles as massage cream.

**Hand Lotion.**

Tragacanth .....	1 ounce
Distilled witchhazel.....	8 ounces
Glycerin .....	8 ounces
Alcohol .....	8 ounces
Tincture of benzoin.....	4 drams
Carbolic acid.....	1 ounce
Oil of bergamot.....	5 minims
Cologne oil.....	5 minims
Soft water to make.....	128 ounces

Macerate the tragacanth in 64 ounces of water for 24 hours. Add first the oils, then the other ingredients to the alcohol, and pour this mixture into a gallon bottle containing the tragacanth in water. Let stand for 12 hours more, shaking at intervals. Strain through cheesecloth. Place in 6-ounce bottles.

**Cosmetic for Rough and Red Hands.**

Lanolin .....	1,000 parts
Liquid paraffin .....	250 parts
Vanillin .....	1 part
Oil of rose, enough to perfume.	

Mix.

**Cosmetic for Rough and Red Hands.**

Starch .....	36 parts
Glycerin, saturated with borax .....	36 parts
Glycerin, pure.....	140 parts
Water .....	116 parts
Benzoic acid.....	4 parts

Add the saturated glycerin-borax solution to the glycerin and mix with the water. Add the benzoic acid and starch and heat on the water bath with constant agitation until a clear, homogeneous fluid is obtained. Remove from the bath, cool down slightly and perfume as desired, using ionone for violet, jasmine, etc.

**Hand Cleaning Paste for Automobilists.**

Soft soap.....	80.5 parts
Ammonia water.....	5.0 parts
Pumice, finely powdered.....	31.0 parts
Oil of turpentine, enough to form into a paste.	

Fill into tubes.

**Soap Paste for Motorists.**

Soft soap, 80.5; strong solution of ammonia, 5; finest powdered pumice stone, 31; oil of turpentine, sufficient to make a soft paste for filling into collapsible tubes.

**Soap Paste for Motorists.**

Domestic soap, dried and rasped, 750; crystallized sodium carbonate, 20; hot water, 120; heat and stir on a water bath until homogeneous; then add finely levigated pumice stone, 200; powdered talc, 50, and perfume with any essential oil.

**Soap Paste for Motorists.**

Soft soap, 80; solution of ammonia, 5; benzene, or oil of turpentine, q.s.; finely levigated pumice stone, 30. This may be made by first mixing the soap and solution of ammonia, incorporating the solvent, and then adding the pumice stone. A non-gritty paste may be made by melting 3 parts of soft soap at a gentle heat, removing from the fire, and gradually incorporating oil of turpentine, 1 fl. part.

**Crit or Pumice Soap.**

Cottonseed oil.....	500 c.c.
Stearic acid.....	500 grams
Sodium hydroxide.....	150 grams
Alcohol .....	150 c.c.
Sodium chloride (20% sol.)	q.s.
Distilled water.....	q.s.
Powdered pumice.....	300 grams



Heat the oil and acid until the latter is completely dissolved, add the sodium hydroxide dissolved in a liter of water, and heat with constant stirring for 15 minutes. Next add the alcohol and stir until saponification is completed and a homogeneous mixture results. Then add one liter of 20 per cent. solution of sodium chloride and stir vigorously. Allow to stand until the soap is hardened, drain off the alkaline liquid by punching a hole in the soapy mass on one side, and wash the soap two or three times with distilled water. Then melt the soap, and while still on the fire thoroughly incorporate the powdered pumice stone. While still hot the soap is poured into suitable molds, and in 24 hours it is sufficiently hard for use.

## DANDRUFF REMEDIES.

### Dandruff.

Ointment of mercury nitrate ..... 1 dram  
Petrolatum ..... 7 drams

Mix. Cut the hair short and keep well brushed, and apply the ointment every night for a fortnight.

### Dandruff.

Balsam peru ..... ½ dram  
Betanaphthol ..... 1 dram  
Lanolin ..... 6 drams  
Benzoated lard ..... 2 drams

Massage the scalp every night.

### Dandruff Shampoo.

Oil of lavender ..... 10 drops  
Alcohol ..... ½ ounce  
Soft soap ..... 2 ounces  
Water ..... 5 ounces

Mix the soap with the water till dissolved, then add the alcohol and oil.

### Dandruff Lotion.

Tincture of cantharides ..... ½ ounce  
Dilute acetic acid ..... ½ ounce  
Spirit of rosemary ..... 1 ounce  
Glycerin ..... ½ ounce  
Rose water, enough to make ..... 8 ounces

Mix.

### Dandruff.

Potassium carbonate ..... 1 dram  
Ammonia water ..... 6 fl. drams  
Tincture of cantharides ..... 2½ fl. drams  
Oil of nutmeg ..... 12 drops  
Perfume, quantity sufficient, add ..... ½ pint

Mix.

### Dandruff.

Tincture of cinchona compound ..... 1 fl. ounce  
Tincture of benzoin, compound ..... 2 fl. ounces  
Glycerin ..... 1 fl. ounce  
Perfume ..... 2 fl. ounces  
Water ..... 2 fl. ounces

Mix, let stand 24 hours, filter.

### Dandruff.

Salol ..... ½ dram  
Tannic acid ..... 1 dram  
Balsam of peru ..... ½ ounce  
Lanolin ..... ½ ounce  
Benzoated lard ..... 1 dram

Use every night.

### Dandruff.

Resorcin ..... 3 scruples  
Olive oil ..... 3 scruples  
Ether ..... 3 scruples  
Alcohol ..... 6½ ounces

Apply to the roots of the hair twice a week, after washing with soap and warm water.

### Dandruff.

Red oxide of mercury ..... 10 grains  
Ammoniated mercury ..... 10 grains  
Petrolatum ..... 1 ounce

Mix, and apply every night.

### Dandruff Lotion.

Chloral hydrate ..... 1 dram  
Glycerin ..... 4 drams  
Bay rum ..... 8 ounces

Apply every night.

### Dandruff.

Corrosive sublimate ..... 10 grains  
Cologne ..... 5 ounces

Rub well into the scalp every night.

### Dandruff Pomade.

Salicylic acid ..... 30 grains  
Borax ..... 15 grains  
Balsam peru ..... 25 minims  
Oil of anise ..... 6 drops  
Oil of bergamot ..... 20 drops  
Vaseline ..... 6 drams

Massage the scalp every other night.

### Dandruff Pomade.

Yellow oxide of mercury ..... 10 grains  
Ammoniated mercury ..... 4 grains  
Camphor ointment ..... ½ ounce  
Simple ointment ..... 1½ ounces  
Oil of neroli ..... 3 drops  
Oil of rose ..... 3 drops

Melt the ointments, rub the powders with a little of the ointments on a slab, add the remainder of the ointments and finally the oils.

## CACHOUS FOR THE BREATH

### Cachous.

Gum acacia ..... 1½ ounces  
Catechu, powdered ..... 2¼ ounces  
Licorice juice ..... 1¾ pounds  
Cascarilla, powdered ..... ¾ ounce  
Mastic, powdered ..... ¾ ounce  
Orris root, powdered ..... ¾ ounce  
Oil of cloves ..... 75 grains  
Oil of peppermint ..... ½ ounce  
Tincture of ambergris ..... 75 grains  
Tincture of musk ..... 75 grains

Boil the solids with water until a pasty mass results, which becomes firm on cooling, then add the aromatics, roll into pills, and cover with silver foil.

### Cachou Aromatise.

Mace ..... 216 grains  
Cardamom ..... 154 grains  
Vanilla ..... 283 grains  
Oil of neroli ..... 20 drops  
Musk ..... 15 grains  
Orris root ..... 309 grains  
Cloves ..... 77 grains  
Oil of cinnamon ..... 30 drops  
Oil of lemon ..... 40 drops  
Oil of peppermint ..... 60 drops  
Extract of licorice, quantity sufficient.  
Chocolate ..... 3 1-3 av. ounces

**Aromatic Cachous.**

Extract of licorice.....	3 ounces
Oil of cloves.....	1½ drams
Oil of cinnamon.....	15 drops

Mix and divide into 1 grain pills and silver leaf.

**Aromatic Cachous.**

Powdered mace.....	200 grains
Powdered cardamoms.....	150 grains
Powdered vanilla.....	300 grains
Powdered cloves.....	75 grains
Powdered orris root.....	300 grains
Powdered musk.....	5 grains
Oil of neroli.....	20 drops
Oil of cinnamon.....	30 drops
Oil of lemon.....	40 drops
Oil of peppermint.....	60 drops
Extract of licorice.....	2 ounces
Chocolate.....	3 ounces
Syrup, enough to make a mass.	

Divide into small pills and cover with silver leaf.

**Aromatic Cachous.**

Catechu.....	7 drams
Orris powder.....	40 grains
Sugar.....	3 ounces
Oil of rosemary (or oil of peppermint, cloves, or cinnamon) 4 drops or q. s.	

Make into pills and cover with silver leaf.

**Aromatic Cachous.**

Extract of licorice.....	3 ounces
Water.....	3 ounces
Dissolve by heat in a water bath, and add	
Catechu.....	1 ounce
Gum arabic.....	¼ ounce

Evaporate to the consistence of an extract, and add in powder, ½ dram each of mastic, cascarilla, charcoal and orris, remove from the fire and add oil of peppermint ½ dram, essence of ambergris and essence of musk each 5 drops; roll it flat on an oiled marble slab, and cut it into very small lozenges. Or it may be rolled into small pills and silvered.

**Aromatic Cachous.**

Musk, in powder.....	½ grain
Cardamom, powdered.....	8 grains
Ginger, powdered.....	15 grains
Orris root, powdered.....	15 grains
Storax.....	½ dram
Sugar, in powder.....	2½ drams
Tragacanth, powdered.....	½ dram
Peppermint oil.....	3 drops
Syrup, enough to make a mass.	

Triturate the musk and peppermint oil for 10 minutes with the sugar, add the tragacanth. Mix the storax with the spices, mix both mixtures and mass. Divide into 300 pills, coat with silver.

**Prince Albert Cachous.**

Mace.....	75 grains
Orris root.....	75 grains
Licorice root.....	75 grains
Cardamom seed.....	15 grains
Cloves.....	8 grains
Vanilla.....	1-3 grain
Cumarin.....	½ grain
Musk.....	1-12 grain
Oil of peppermint.....	3 drops
Oil of rose.....	2 drops
Oil of lemon.....	2 drops
Oil of neroli.....	2 drops
Oil of Ceylon cinnamon.....	1 drop
Mucilage, sufficient.	

Mix and form into hard pills weighing ¾ grain and coat with silver.

**Aromatic Cachous.**

Chocolate powder.....	1½ ounces
Ground coffee.....	1½ ounces
Prepared charcoal.....	1 ounce
Sugar.....	1 ounce
Vanilla (pulverized with the sugar).....	1 ounce
Mucilage, quantity sufficient.	
Make into lozenges of any form.	

**Pastilles (Aromatic).**

Roasted coffee.....	75 parts
Wood charcoal.....	25 parts
Boracic acid.....	25 parts
Sugar.....	60 parts

Pulverize the ingredients separately, very finely, mix and add sufficient vanillin to perfume to the taste. Finally, add sufficient gum arabic mucilage to make a mass. Divide into pastilles, lozenges, or little pills.

**Pastilles, Mentholated.**

Gelatin.....	1 ounce
Glycerin.....	2 ounces
Orange flower water.....	2½ ounces
Menthol.....	5 grains
Alcohol.....	1 dram

Soak the gelatin in the water for 2 hours, put on the water bath, dissolve, add 1 ounce of glycerin. Dissolve the menthol in the alcohol, add 1 ounce of glycerin and add to the gelatin solution. Mix and divide into pastilles when cool.

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## PREPARATIONS FOR THE FEET.

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**Perspiration of the Feet.**

Lead acetate.....	1 dram
Vinegar.....	1 ounce
Methylated spirit.....	2 ounces
Water, enough to make.....	20 ounces

Apply to feet as a lotion.

**Perspiring Feet.**

A 5 per cent. solution of chromic acid applied to the feet after bathing and thoroughly drying them. Apply with a brush. Two or three treatments are sufficient.

**Perspiring Feet.**

Talc.....	10 parts
Alum.....	2 parts

Largely used in Swiss army, preferably to chromic acid, and applicable even for sore feet.

**Perspiring Feet.**

Potassium permanganate.....	20 grains
Water.....	2 ounces

Apply to the soles of the feet and between the toes on retiring.

**Perspiring Feet.**

Chloral hydrate.....	2 scruples
Water.....	1 ounce

Apply to the soles of the feet and between the toes on retiring.

**Perspiring Feet.**

Napthalin in scales is simply strewn into the stockings or shoe.

**Lotion for Foetid Feet.**

Burnt alum.....	30 grains
Boracic acid.....	30 grains
Water or rose water.....	1 ounce

Apply with soft sponge without rubbing just as shoes and stockings are removed, while the feet are yet moist. This is quite necessary, as also the care not to rub. Let this be repeated every two or three days, in the evening.

#### Tender Feet.

Zinc oleate, powdered..... 1 ounce  
Boric acid, powdered..... 2 ounces  
French chalk, powdered.... 3 ounces  
Mix and use as a dusting powder.

#### Foot Powder.

A powder composed of salicylic acid, soap, talc and starch. The powder renders the feet firm, induces an agreeable softness, and removes all unpleasant odor, its action being to prevent the formation of butyric, valeric, and other acids of the same family, which injure the feet.

#### Powder for the Feet.

Salicylic acid..... 1 dram  
Alum ..... 2 drams  
Starch ..... 1 ounce  
Oil of bergamot..... 10 drops  
Alcohol ..... 1 dram  
Mix and add:  
Talcum ..... 4 ounces  
Mix well and dust into the shoes.

#### Foot Powder.

Salicylic acid..... 1 dram  
French chalk..... 4 ounces  
Mix and sift.

#### Foot Powder.

Salicylic acid..... 1 dram  
Powdered zinc oleate..... 1½ ounces  
Starch ..... 3 ounces  
Mix intimately and sift. A perfume may be added, to suit.

#### Foot Powder.

Salicylic acid..... ½ ounce  
Boric acid, powdered..... 4 ounces  
Oil of eucalyptus..... 1 dram  
Talcum powder..... 8 ounces  
Mix intimately.

#### Foot Powder.

Boric acid..... 1 ounce  
French chalk..... 3 ounces  
Oil of bergamot..... 5 drops  
Mix intimately.

#### Foot Powder.

Camphor ..... 1 dram  
Thymol ..... 1 dram  
Powdered boric acid..... 1 pound  
Starch ..... 1 pound  
Mix the camphor and thymol in a mortar till liquid, add the starch gradually, then the boric acid. Sift through a fine sieve.





# PART THREE.

## Veterinary Remedies.

### MEDICINES FOR HORSES.

Medicines given to horses may be in the shape of pills, commonly called "balls" or "boluses," powders or drenches. The first form is generally preferred. Balls for horses should be oblong, about 2 inches in length and  $\frac{3}{4}$  inch in diameter. They should be freshly made and soft when given. If the material is sticky or nauseating, the balls may be wrapped in tissue paper before giving. Powders may be mixed with the food, if they are palatable. Nauseating powders may be made into balls or masses which are better put into gelatin capsules. Very fine mineral powders may be mixed with water and given as a drench. Drenches should be given well diluted with water or oil, as the case may be, put in a strong bottle of the capacity from a pint to a quart. The dose of the remedies made by the following formulas is intended for a full grown horse (5 years). For foals or young horses, the following proportions should be used: One year, one-quarter the quantity; 2 years, one-half the quantity, and 3 or 4 years, three-quarters the quantity.

#### Anaemia Powder.

Sulphur .....	2 ounces
Potassium bicarbonate.....	1 ounce
Sodium chloride.....	20 ounces

Powder and mix well.

Give a heaping tablespoonful with each meal.

#### Anaemia Powder.

Iron sulphate.....	1 ounce
Black antimony.....	1 ounce
Sulphur .....	2 ounces
Calamus, powdered.....	2 ounces
Glauber salt.....	6 ounces
Sodium chloride.....	8 ounces

Mix well and give a tablespoonful with each meal.

#### Anaemia Medicine.

Fowler's solution.

Give one tablespoonful daily mixed with the food, or on a lump of bread.

#### Antispasmodic Ball.

Opium .....	1 dram
Powd. belladonna.....	10 grains
Linseed meal.....	3 drams
Oil or syrup, enough to make a ball.	

Mix the drugs and add enough palm oil or cottonseed oil to form in a ball. In place of oil, molasses or syrup may be used, if the nature of the powders requires such a vehicle to form a ball.

Give two or three balls daily in spasm of the neck of the bladder.

#### Ball for Appetite.

Asafetida .....	$\frac{3}{4}$ ounce
Saffron .....	1 ounce
Bayberries .....	$\frac{1}{4}$ ounce
Aloes .....	$\frac{3}{4}$ ounce

Powder and make into a ball, as directed in the preceding formula.

#### For Loss of Appetite.

Black antimony.....	$\frac{1}{2}$ ounce
Cream tartar.....	1 ounce
Calamus, powdered.....	4 ounces
Gentian, powdered.....	4 ounces
Caraway seed.....	2 ounces
Mustard seed.....	2 ounces
Rye flour.....	2 ounces
Juniper berries, powdered.	4 ounces

Mix well and make into a paste with molasses and water. Smear one tablespoonful on the horse's tongue, or give 1 ounce of the mixture made into a ball, 3 times daily.

#### For Loss of Appetite.

Gentian root.....	4 ounces
Sodium sulphate.....	2 ounces
Sodium chloride.....	1 ounce
Sodium bicarbonate.....	1 ounce

Mix. Give a tablespoonful with each meal.

#### Cordial Balls.

Coriander seed.....	8 ounces
Caraway seed.....	8 ounces
Gentian, in powder.....	8 ounces
Ginger .....	4 ounces
Oil of aniseed.....	$\frac{1}{2}$ ounce
Honey or palm oil, enough to form a mass.	

Cordial, warming and stomachic. Dose,  $\frac{1}{4}$  ounces.

#### Cordial Balls.

Aniseed .....	1 ounce
Caraway .....	1 ounce
Cardamom .....	1 ounce
Saffron .....	2 drams
Licorice powder.....	$\frac{1}{2}$ ounces
Oil of anise.....	$\frac{1}{4}$ ounce
Sugar .....	4 ounces
Wheat flour and water, enough to make a paste.	

Give a ball, weighing  $\frac{1}{2}$  to 2 ounces, 3 times a day.

#### Cordial Balls.

Anise seed.....	8 ounces
Caraway .....	8 ounces
Ginger .....	8 ounces
Gentian .....	4 ounces
Cumin .....	4 ounces
Turmeric .....	4 ounces
Cassia .....	2 ounces
Oil of caraway.....	2 drams
Molasses, enough to form a paste.	

Make into balls of 2 ounces each.

#### Cordial Balls for Coughs.

Fenugreek .....	3 ounces
Anise seed.....	3 ounces
Cumin .....	3 ounces
Safflower .....	3 ounces
Flecampagne .....	3 ounces
Coltsfoot .....	3 ounces
Sulphur .....	3 ounces
Olive oil.....	8 ounces
Honey .....	8 ounces
Oil of anise.....	1 ounce
Molasses .....	12 ounces
Wheat flour, enough to make a paste.	

One ball, or two ounces suspended in a quart of warm water every day.

**Bronchial Cordial Ball.**

Ammonium chloride..... 1 ounce  
 Fenugreek ..... 1 ounce  
 Fennel ..... 1 ounce  
 Marshmallow ..... 3 ounces  
 Molasses, enough to make a paste.

Reduce to fine powder and make into a paste. Give a ball of 2 ounces three times a day.

**Colic Ball.**

Magnesium sulphate..... 6 ounces  
 Marshmallow ..... 1 ounce  
 Flour ..... 1 ounce  
 Syrup, enough to make a mass.

Give one-half of this and repeat in 1 hour. Or make into balls of 2 ounces and give one every ½ hour.

**Colic Ball.**

Sodium sulphate..... 6 ounces  
 Juniper berries, powdered. 1 ounce  
 Wheat flour..... 1 ounce

Give as directed in the preceding formula.

**Cough Ball.**

Ipecac, powdered..... 1 dram  
 Camphor, powdered..... 2 drams  
 Licorice, powdered..... 1 dram

Honey, to form a ball.  
 To be given every morning.

**Cough Ball.**

Squill ..... 2 drams  
 Gum ammoniac..... 4 drams  
 Ipecac ..... 4 drams  
 Opium ..... 4 drams  
 Allspice ..... 1 ounce  
 Sulphur ..... 4 ounces  
 Castile soap..... 2 ounces

Treacle to form a mass for 6 balls. One twice a day.

**Cough Ball.**

Arsenous acid..... 3 grains  
 Mix with linseed meal and oil to form a ball. Give 3 times a week.

**Cough Ball.**

Aloes ..... 2 ounces  
 Digitalis, powdered..... 1 ounce  
 Linseed meal..... 13 ounces

Make into a mass with oil or syrup. Give a ball of 1 ounce twice a day.

**Cough Ball.**

Tartar emetic, ½ dram; digitalis, ½ dram; nitre, 1½ drams; tar enough to form a ball. Every night.

**Cough Ball.**

Powdered squill, 1 dram; gum ammoniac, 3 drams; opium, ½ dram; syrup to form a ball.

**Cough Ball.**

Calomel, 26 grains; gum ammoniac, 2 drams; balsam of peru, 1 dram; powdered squill, 1 dram; honey to form a ball. One every morning.

**Cough Ball.**

Marshmallow, powdered... 1 dram  
 Licorice root, powdered... 1 dram  
 Elecampane ..... ½ dram  
 Sulphur ..... ½ dram  
 Kermes mineral..... ½ dram  
 Honey, enough to make a ball.

Give one ball twice a day.

**Cough Ball.**

Sulphur, ½ ounce; asafetida, 1 ounce; licorice powder, 1 ounce; Venice turpentine, 1 ounce; for 4 balls. One every night for 4 times.

**Cough Ball.**

Spermaceri, 1 ounce; balsam of copaiba, 1 ounce; benzoin, 2 drams; sulphur, 2 ounces; elecampane, 2 ounces; powdered squill, 4 drams; emetic tartar, 2 drams; syrup of poppies to form a mass for 8 balls.

**Cough Ball.**

Pulverized ipecac, ¼ ounce; camphor, 2 ounces; squill, ½ ounce. Mix with honey to form into mass, and divide into 8 balls. Give 1 every morning.

**Cough Ball.**

Castile soap..... 5 ounces  
 Aniseed ..... 5 ounces  
 Licorice ..... 5 ounces  
 Barbadoes tar..... 6 ounces  
 Ammoniacum ..... 3 ounces  
 Balsam of tolu..... 1 ounce

Honey, enough to make a mass for 12 balls.

One every morning for a fortnight.

**Cough Ball.**

Digitalis ..... ½ dram  
 Camphor ..... 1 dram  
 Emetic tartar..... 1 dram  
 Saltpetre ..... 3 drams  
 Linseed meal..... 1 dram

Make up with Barbadoes tar, and give 1 daily.

**Cough Ball.**

Licorice powder..... ½ ounce  
 Linseed or barley meal.. 1 ounce  
 Tar ..... 1 dram

Honey to form a ball.

**Cough Ball.**

Blood root, powdered..... ¼ ounce  
 Potassium chlorate..... ¼ ounce  
 Licorice, powdered..... 1 ounce

Make into a ball with honey. Give twice a day.

**Cough Ball.**

Lobelia, powdered..... ¼ ounce  
 Camphor, powdered..... 1 dram  
 Opium, powdered..... ½ dram  
 Elecampane ..... 1 ounce

Make into a ball with molasses. Give twice a day.

**Cough Ball.**

Blood root, powdered..... 1 dram  
 Lobelia, powdered..... 2 drams  
 Rosin, powdered..... ½ ounce  
 Licorice root, powdered... ½ ounce

Make a ball with honey. Give 3 times a day.

**Cough Ball.**

Potassium chlorate..... ¼ ounce  
 Blood root..... 1 dram  
 Licorice ..... 1 ounce  
 Elecampane ..... ½ ounce

Make a ball with honey. Give 3 times a day.

**Cough Ball.**

Ipecacuanha, powdered... 1 dram  
 Heroin hydrochloride..... 3 grains  
 Powdered digitalis..... 1 dram  
 Honey, enough to form a ball.

If heroin is not available, 10 grain dose of codeine may be substituted.

**Cough Ball.**

Camphor ..... ½ dram  
 Black antimony..... ½ dram  
 Powdered squill ..... ½ dram  
 Powdered digitalis ..... ½ dram  
 Powdered ginger ..... 1 dram  
 Saltpetre ..... 2 drams

Honey, enough to make a ball.

Give morning and evening.

**Cough Ball.**

Ipecac .....	1 ounce
Squill .....	1½ ounces
Licorice .....	2 ounces

Mix into 6 balls with honey. Give one 3 times a day.

**Cough Ball.**

Aconite leaves.....	1 dram
Digitalis .....	½ dram
Anise, powdered.....	1 dram
Arsenic .....	½ grain

Make into one ball with linseed meal and syrup. Give one every night.

**Diuretic Balls.**

Digitalis .....	1 ounce
Aloes .....	1 ounce
Licorice root.....	13 ounces
Honey or Barbadoes tar, enough to make into balls.	

Divide the above into 16 doses and give one twice a day. With care.

**Diuretic Balls.**

Common turpentine.....	4 ounces
Ginger .....	1 ounce
Flour, quantity sufficient.	
Castile soap.....	4 ounces
Caraway .....	8 ounces

Dose 1 ounce to 1½ ounces.

**Diuretic Balls.**

Rosin .....	1½ ounces
White soap.....	16 ounces
Spirit of nitrous ether...	8 ounces
Dried common soda.....	2 ounces
Oil of juniper.....	4 ounces

Beat together, adding flour, if required. Dose 1 ounce to 1½ ounces.

**Diuretic Balls.**

Rosin .....	1 ounce
Powdered soap.....	1 ounce
Sweet spirit of nitre.....	1 ounce

Make into a mass and divide in 2 balls.

**Diuretic Balls.**

Saltpetre .....	1 pound
Castile soap.....	½ pound
Common turpentine.....	1 pound
Barley meal.....	2½ lbs. or q. s.

Dose about 1 ounce.

**Diuretic Balls.**

White soap.....	8 ounces
Saltpetre .....	3 ounces
Rosin .....	3 ounces
Camphor .....	3 drams
Oil of juniper.....	3 drams

For 6 balls; 1 every other morning.

**Diuretic Balls.**

Powdered rosin.....	1 ounce
Saltpetre .....	1 ounce
Powdered buchu leaves...	½ ounce

Make with honey into 4 balls.

**Diuretic Balls.**

Camphor .....	½ dram
Ginger .....	1½ drams
Rye flour .....	1 ounce
Water, enough to make a ball.	

Give one morning and evening.

**Diuretic Balls.**

Potassium nitrate .....	50.0
Potassium carbonate .....	15.0
Pulverized rosin.....	100.0
Castile soap.....	100.0
Oil of juniper wood.....	5.0
Licorice root.....	30.0
Water, quantity sufficient.	

Mix and make into 6 balls. Dose: 1 bolus 3 times a day.

**Diuretic Balls.**

Camphor .....	½ ounce
Alum .....	1 ounce
Oak bark.....	1 ounce
Angelica root.....	1 ounce
Rye flour.....	1½ ounces
Water, enough to make a paste.	

Make balls of 1½ to 2 ounces and give one three times a day.

**Diuretic Balls.**

Yellow rosin, 2 ounces; common turpentine, 4 ounces; soap, 3 ounces; melt together, stir in 1 ounce sweet oil, add oil of aniseed, ½ ounce; oil of juniper, ½ ounce; ginger, 2 drams; linseed meal, quantity sufficient; mix, divide into 8 balls; 1 a day till the water is affected.

**Diuretic Alternative Balls.**

Sodium carbonate, dried...	1 ounce
Castile soap.....	6 drams
Rosin .....	2 ounces
Licorice, powdered.....	½ ounce
Tar, enough to form 6 balls.	

Give one daily.

**Diuretic Alternative Balls.**

Potassium acetate.....	½ ounce
Fenugreek .....	1 ounce
Molasses, enough to make two balls.	

One daily.

**Diuretic Balls.**

Cream tartar.....	½ ounce
Rosin .....	2½ ounces
Sulphur .....	½ ounce
Linseed meal.....	1 ounce
Palm oil.....	1 ounce

Mix. Make into balls of 2 ounces each.

**Diaphoretic Ball.**

Tartar emetic.....	1 dram
Ginger .....	2 drams
Camphor .....	½ dram
Opium .....	½ dram
Oil of caraway.....	15 drops
Honey, enough to form a ball.	

Give one daily.

**Fever Balls.**

Powdered camphor.....	½ dram
Potassium nitrate.....	2 drams
Tartar emetic.....	½ dram
Ground linseed.....	1 ounce
Honey, enough to make a ball.	

Not to be given oftener than twice a day, or continued for more than 3 or 4 days. For the tartar emetic may be substituted calomel 15 grains, opium 15 grains.

**Fever Balls.**

Camphor, 1 dram; saltpetre, 6 drams; antimonial powder, 2 drams; flour and soap to form a ball.

**Fever Balls.**

Antimonial powder, 2 drams; saltpetre, 3 drams; cream of tartar, 2 drams; honey to form a ball. In influenza, twice a day.



**Fever Balls.**

Potassium nitrate.....	1 ounce
Sodium sulphate.....	2 ounces
Flour .....	2 ounces

Make into 2 balls with syrup and give one morning and evening.

**Fever Balls.**

Sodium salicylate.....	3 ounces
Licorice root.....	1 ounce
Rye flour.....	1 ounce

Make into 2 balls with water, give one in the morning, the other the next morning.

**Fever Balls (for Malaria).**

Quinine sulphate.....	1 ounce
Marshmallow .....	3 ounces

Make into 4 balls with syrup, give two balls a day.

**Fever Balls (for Rheumatic Fever).**

Salol .....	5 drams
Marshmallow .....	5 drams

Make into a bolus with syrup.

**Fever Balls (Fever in Influenza).**

Acetanilide .....	5 drams
Marshmallow .....	1 ounce

Make 2 balls with syrup, give one in the morning and one at night.

**Laxative Balls.**

Aloes .....	3 to 4 drams
Soap .....	3 drams
Oil of caraway.....	20 drops

Syrup, enough to form a ball.

Mix.

**Laxative Balls.**

Aloes .....	3 to 4 drams
Soap .....	4 drams
Tartar emetic.....	1 dram

Mucilage, enough to form a ball.

Mix.

**Laxative Balls.**

Aloes .....	1 ounce
Ginger .....	2 drams
Potassium carbonate.....	1 dram
Gamboge .....	1 dram
Oil of fennel.....	20 drops

Make into a ball with honey and cover with tissue paper.

**Balls for Inflammation of the Lungs, Bronchitis, etc.**

Digitalis .....	1 dram
Tartar emetic.....	1½ drams
Saltpetre .....	3 drams
Honey, q. s.	

When the pulse intermits, reduce the dose to half.

**Balls for Inflammation of the Lungs, Bronchitis, etc.**

Antimonial powder.....	2 drams
Digitalis .....	1 dram
Saltpetre .....	3 drams
Cream of tartar.....	3 drams

Honey to form a ball. One every 4, 6, or 8 hours, in inflammation of the lungs.

**Balls for Bronchitis, etc.**

Sodium bromide.....	3 drams
Creosote .....	10 drops
Oil of fennel.....	10 drops

Make into 4 balls with flaxseed meal and syrup. Give two daily.

**Ball for Bronchitis.**

Ammonium bromide.....	40 grains
Oil of fennel.....	5 drops
Licorice powder.....	1 ounce

Make into a ball with honey.

**Ball for Pneumonia.**

White hellebore.....	½ dram
Tartar emetic.....	1 dram
Saltpetre .....	2 drams
Linseed meal.....	6 drams

Make into a ball with syrup. Give one twice a day.

**Balls for Pneumonia.**

Extract of belladonna....	2 drams
Potassium nitrate.....	4 drams
Tartar emetic.....	2 drams
Licorice powder.....	1 ounce

Make into 2 balls with syrup. Give one morning and evening.

**Balls for Pneumonia.**

Digitalis, powdered.....	2 drams
Tartar emetic.....	2 drams
Saltpetre .....	4 drams
Linseed meal.....	1 ounce

Make into 2 balls with honey. Give one twice a day.

**Balls for Pneumonia.**

Calomel .....	1 dram
Opium .....	½ dram
Tartar emetic.....	1 dram
Flaxseed meal.....	1 ounce

Make into a ball with molasses. Give one morning and evening.

**Physic Balls.**

Powdered gamboge .....	½ ounce
Powdered aloes, Socotrine.	1 ounce
Powdered licorice root....	½ ounce
Powdered senna leaves....	½ ounce
Ginger .....	½ ounce
Powdered castile soap,	

Syrup, of each, enough to mass.

Divide into 10 balls. Give 1 and repeat in 4 or 6 hours if needed.

**Physic Balls.**

Aloes .....	5 ounces
Hard soap.....	5 ounces
Salt of tartar.....	1 ounce
Cayenne pepper.....	1 ounce

Melt together and form into 8 balls.

**Physic Ball.**

Barbadoes aloes.....	4 drams
Olive oil.....	1 dram
Molasses .....	2 drams

Melt aloes and olive oil on a water bath, stir in the molasses and make into a ball with linseed meal.

**Physic or Purging Balls.**

Barbadoes aloes 4 to 8 drams, soap 3 to 4 drams, ginger 1 dram, oil of cloves 10 drops (or oil of caraway or aniseed 20 drops), water 1 dram or quantity sufficient; beat together into a mass.

**Physic Ball.**

Barbadoes aloes.....	4 drams
Glycerin .....	2 drams
Ginger .....	½ dram
Gentian .....	½ dram

Melt the aloes and glycerin on a water bath, stir in the powders and make one ball. Dose: One or two balls.

**Purgative Balls.**

Aloes 1 ounce, cream tartar and castile soap each  $\frac{1}{4}$  ounce. Mix with molasses to make a ball.

**Physic Balls.**

Barbadoes aloes..... 1 ounce  
Ginger ..... 1 dram  
Palm oil .....  $\frac{1}{2}$  ounce

Make one ball; wrap in paper before giving.

**Physic Ball.**

Barbadoes aloes..... 4 drams  
Cape aloes..... 2 drams  
Olive oil..... 1 dram

Mix and make into a ball with honey.

**Physic Ball.**

Aloes ..... 1 ounce  
Ginger ..... 1 dram  
Palm oil.....  $\frac{1}{2}$  ounce

Make one ball.

**Physic Ball.**

Barbadoes aloes..... 4 ounces  
Glycerin ..... 4 drams  
Castor oil..... 4 drams  
Ginger ..... 2 drams

Melt the aloes and glycerin on a water bath, mix in the castor oil and ginger and make 4 balls.

**Physic Ball.**

Aloes ..... 1 ounce  
Soap ..... 2 drams  
Potassium carbonate..... 1 ounce  
Oil of anise.....  $\frac{1}{2}$  dram

Make 2 balls with water. Give one, and after 2 hours give the other.

**Physic Ball.**

Aloes .....  $\frac{1}{2}$  ounce  
Magnesium sulphate..... 1 ounce  
Flaxseed meal.....  $\frac{1}{2}$  ounce

Make into a ball with honey.

**Physic Ball.**

Barbadoes aloes..... 1 ounce  
Ginger .....  $\frac{1}{2}$  ounce  
Oil of cloves.....  $\frac{1}{2}$  dram  
Soft soap, and water, of each, enough to make a ball.

Mix.

**Stimulant Ball.**

Angelica, powdered.....  $\frac{1}{2}$  ounce  
Ammonium muriate..... 1 dram

Make one ball. Give one twice a day.

**Stimulant and Expectorant Ball.**

Asafetida ..... 4 ounces  
Elecampane ..... 4 ounces  
Honey, enough to make 6 balls.

Give one twice daily.

**Stimulant and Expectorant Balls.**

Cassia, powdered..... 1 ounce  
Ginger ..... 1 ounce

Make 4 balls with honey. Give one with each meal.

**Tonic Balls.**

Quinine sulphate, 1 dram, gentian, oak bark and honey, to form a ball.

**Tonic Balls.**

Gentian 1 dram, ginger  $\frac{1}{2}$  dram, cascarrilla  $\frac{1}{2}$  dram, treacle and linseed meal to form a ball.

**Tonic Balls.**

Myrrh, 2 drams, mustard flour, 1 dram, cantharides, 5 grains, chamomile, 4 drams, Venice turpentine, quantity sufficient for one ball.

**Tonic Balls.**

Quassia, 2 drams, canella, 2 drams, opium,  $\frac{1}{2}$  dram, ginger, 1 dram, treacle, quantity sufficient for one ball.

**Tonic Balls.**

Gentian, 4 drams; chamomile, 2 drams; iron carbonate, 1 dram; ginger, 1 dram; syrup, enough to make one ball.

**Mineral Tonics.**

Iron sulphate, 2 drams; potassium carbonate, 2 drams; cascarrilla, 2 drams; caraway, 4 drams; treacle, quantity sufficient for one ball.

**Mineral Tonics.**

Iron sulphate, 1 dram; sodium carbonate, 2 drams; myrrh, 1 dram; ginger, 1 dram; cantharides, 6 grains; caraway,  $\frac{1}{2}$  ounce; treacle, quantity sufficient for one ball.

**Jaundice (Yellows) Without Fever.**

Calomel, 1 dram; aloes, 2 drams; soap, 2 drams; for one ball; night and mornings till purged, then so as to keep the bowels lax.

**Jaundice.**

In the later stage, when not costive, calomel, 12 grains; copper sulphate, 1 dram; gentian, 3 drams; oak bark, 3 drams; chamomile, 3 drams; syrup, to form a ball; once or twice a day.

**Alternative Powder.**

Sulphur ..... 4 ounces  
Levigated antimony..... 2 ounces  
Saltpetre ..... 3 ounces

Mix and give one tablespoonful with each meal.

**Alternative Powder.**

Saltpetre ..... 4 ounces  
Rosin ..... 4 ounces  
Black antimony..... 1 ounce  
Flowers of sulphur..... 11 ounces

Mix. Dose, one ounce every evening with moistened corn, for 6 or 8 times.

**Alternative Powder.**

Black antimony..... 5 grains  
Cream tartar..... 1 dram  
Iron tartrate..... 15 grains

Mix. One powder twice a day.

**Alternative Powder or Blood Purifier.**

Cream of tartar..... 1 ounce  
Sulphur ..... 1 ounce  
White rosin..... 1 ounce  
Gum guaiacum.....  $\frac{1}{2}$  ounce  
Potassium nitrate.....  $\frac{1}{2}$  ounce  
Gentian root..... 1 ounce  
Golden sulphuret of antimony ..... 2 drams

Mix well and give a tablespoonful 3 times a day.

**Alternative, Diaphoretic and Diuretic Powder.**

Sulphur ..... 1 ounce  
Black antimony..... 1 ounce

Mix and divide into 2 powders. One morning and evening.

**Alterative Powder.**

Black antimony.....	1 ounce
Sulphur .....	½ ounce
Cream tartar.....	½ ounce

Mix. Give as one dose.

**Aromatic Powder (Spice Powder).**

Caraway .....	3 drams
Pimenta .....	2 drams
Ginger .....	1 dram
Licorice .....	1 dram

Mix, for one dose.

**Bronchitis Powder.**

Powdered nux vomica....	40 grains
Powdered arsenic.....	2 grains
Powdered copper sulphate,	40 grains

Mix well, for one dose.

Give one powder night and morning in feed.

**Alterative Powder.**

Sodium hyposulphite.....	1 ounce
Sulphur .....	4 drams

Mix well and give each morning.

**Bronchitis Powder.**

Blood root.....	2 ounces
Potassium chlorate.....	2 ounces
Licorice .....	10 ounces

Mix and give a tablespoonful 3 times a day.

**Bronchial Powders.**

Blood root.....	2 ounces
Elecampane .....	4 ounces
Rosin .....	4 ounces
Licorice root.....	8 ounces

Mix. A tablespoonful with each meal.

**Bronchial Powders.**

Lobelia .....	4 ounces
Elecampane .....	4 ounces
Licorice root.....	8 ounces

Mix. A tablespoonful with each meal.

**Bronchial Powders.**

Potassium chlorate.....	2 ounces
Elecampane .....	4 ounces
Lobelia .....	2 ounces
Licorice root.....	8 ounces

Mix. A tablespoonful 3 times a day.

**Cleaning Powder.**

Gentian, powdered.....	4 ounces
Blood root, powdered....	4 ounces
Golden seal, powdered....	4 ounces
Saltetre, powdered.....	1 ounce
Antimony, powdered.....	½ ounce

Give a large spoonful every day in wet feed.

**Condition Powder.**

Fenugreek,	
Cream tartar,	
Sulphur,	
Saltetre,	
Rosin, of each, equal parts.	

Mix.

**Condition Powder.**

Licorice .....	1 pound
Elecampane .....	1 pound
Fenugreek .....	1½ pounds
Gentian .....	½ pound
Anise seed.....	¼ pound
Ginger .....	¼ pound
Black antimony.....	¼ pound
Saltetre .....	½ pound
Sulphur .....	½ pound
Epsom salt.....	1 pound
Rosin .....	¼ pound
Copperas .....	¼ pound

Reduce to a fine powder, mix well and give a tablespoonful with each meal.

**Condition Powder.**

Asafetida .....	½ ounce
Jamaica ginger.....	1 ounce
Skunk cabbage.....	1 ounce
Wild turnip.....	1 ounce
Licorice root.....	1 ounce
Lobelia .....	1 ounce
Black antimony.....	1 ounce
Rosin .....	1 ounce
Saltetre .....	1 ounce
Tartar emetic.....	1 ounce
Gentian root.....	1 ounce
Iron sulphate, dried....	1 ounce
Cream tartar.....	1 ounce
Sulphur .....	1 ounce
Blood root.....	1 ounce
Flaxseed meal.....	10 ounces
Brown sugar, enough to	
make .....	2 pounds

Separately powder and then mix thoroughly. Tablespoonful dose 3 times a day for the first week, and then only twice a day in wet chop feed.

**Condition Powder.**

Flowers of sulphur.....	8 ounces
Powdered licorice .....	8 ounces
Powdered fenugreek .....	6 ounces
Potassium nitrate.....	4 ounces
Powdered ginger.....	3 ounces

Mix well and give a tablespoonful three times a day.

**Condition Powder.**

Potassium nitrate.....	4 ounces
Sulphur .....	4 ounces
Powdered gentian .....	1 ounce
Powdered fenugreek .....	1 ounce
Powdered licorice .....	4 ounces

Mix well. A tablespoonful 3 times a day.

**Condition Powder.**

Black antimony.....	4 ounces
Fenugreek .....	4 ounces
Flowers of sulphur.....	2 ounces
Barley meal.....	8 ounces

Mix. A tablespoonful with corn.

**Condition Powder.**

Sulphur, 2 pounds, fenugreek, 4 pounds, cream of tartar, 1 pound, licorice, 1 pound, Saltetre, 1 pound, black antimony, ½ pound, gentian, ¼ pound, aniseed, ¼ pound, common salt, 1 pound; dose, 1 ounce daily for 2 or 3 weeks.

**Condition Powder for Distemper.**

Licorice .....	8 ounces
Fenugreek .....	8 ounces
Elecampane .....	8 ounces
Blood root.....	4 ounces
Tartar emetic.....	1 ounce
Ginger .....	2 ounces
Cayenne .....	2 ounces

Separately powder, mix well and give a tablespoonful with each meal.

**Antimony Condition Powder.**

Black sulphide antimony.	6 ounces
Copperas .....	4 ounces
Sulphur .....	4 ounces
Saltetre .....	4 ounces
Powdered rosin.....	4 ounces
Powdered fenugreek.....	4 ounces

Mix in a mortar and pass through sieve. One tablespoonful in feed, once a day 3 times a week.

**Condition Powder.**

Gentian .....	4 ounces
Licorice .....	4 ounces
Fenugreek .....	16 ounces
Potassium nitrate.....	4 ounces
Common salt.....	4 ounces

Mix. Give a tablespoonful twice a day to promote appetite.



**Condition Powder.**

Aromatic powder.....	2 ounces
Asafetida .....	$\frac{3}{4}$ ounce
Cream tartar.....	$\frac{3}{4}$ ounce
Yellow antimony.....	$\frac{3}{4}$ ounce

Mix. Give one-half as a dose.

**Antimony Condition Powder.**

Sulphur .....	2 pounds
Fenugreek .....	4 pounds
Cream of tartar.....	1 pound
Powdered licorice.....	1 pound
Saltpetre .....	1 pound
Black antimony.....	$\frac{1}{2}$ pound
Powdered gentian .....	$\frac{1}{4}$ pound
Powdered anise .....	$\frac{1}{4}$ pound
Common salt.....	1 pound

Dose: One ounce daily for 2 or 3 weeks.

**Farmer's Condition Powder.**

Gentian .....	2 ounces
Saltpetre .....	$\frac{1}{2}$ ounce
Sulphur .....	2 ounces
Rosin .....	1 ounce
Fenugreek .....	1 ounce
Ginger .....	2 ounces
Cayenne pepper.....	1 ounce
Black antimony.....	2 ounces
Flaxseed .....	5 ounces
Elm bark.....	5 ounces
Blood root.....	1 ounce
Copperas .....	5 ounces
Sodium sulphate.....	$4\frac{1}{2}$ ounces

Separately reduce the ingredients to a fine powder and mix.

Dessertspoonful 2 times a day in the feed.

**Equinocure Condition Powder.**

Sodium bicarbonate.....	12 ounces
Iron carbonate (red oxide)	6 ounces
Powdered fenugreek .....	6 ounces
Powdered aniseed .....	6 ounces
Powdered gentian .....	6 ounces
Powdered caraway .....	6 ounces
Potassium nitrate.....	12 ounces

Mix. A tablespoonful twice a day.

**German Cavalry Condition Powder.**

Common salt.....	1 ounce
Glauber salt.....	2 ounces
Sodium bicarbonate.....	2 ounces
Juniper berries.....	2 ounces
Gentian .....	2 ounces
Ginger .....	2 ounces
Linseed .....	5 ounces
Fenugreek .....	5 ounces
Asafetida .....	5 pounds
Fennel seed, enough to make .....	8 pounds

Powder separately and mix thoroughly. The dose for a horse or cow is a heaped-up teaspoonful administered with the animal's food.

**Condition Powder.**

Powdered cinchona.....	1 ounce
Flowers of sulphur.....	1 ounce
Potassium sulphate, dry..	4 ounces
Potassium nitrate.....	4 ounces
Powdered gentian .....	4 ounces
Powdered fenugreek .....	2 ounces
Powdered licorice root....	4 ounces

Mix well. A tablespoonful with each meal.

**Condition Powder.**

Powdered gentian.....	4 ounces
Potassium nitrate.....	1 ounce
Sulphur .....	4 ounces
Powdered ginger.....	4 ounces
Black antimony.....	4 ounces

Mix well. A tablespoonful each morning.

**Hinds' Condition Powder.**

Sulphur .....	2 ounces
Tartar emetic.....	1 ounce
Common salt.....	1 pound
Liver of antimony.....	2 ounces

Powder and mix. Dose, from 1 to 2 ounces.

**Condition Powder (Kornenberger's Veterinary Powder).**

Epsom salt.....	1 pound
Flowers of sulphur.....	2 ounces
Calamus .....	1 ounce
Gentian .....	1 ounce

All finely powdered.

**Maud S' Condition Powder.**

Exsiccated iron sulphate..	5 pounds
Cantharides .....	1 pound
Ginger .....	3 pounds
Black sulphuret of antimony .....	6 pounds
Potassium nitrate.....	5 pounds
Sulphur .....	10 pounds
Flaxseed .....	10 pounds
Gentian (best).....	7 pounds
Cream of tartar.....	3 pounds
White rosin.....	5 pounds
Anise seed.....	5 pounds

Thoroughly powder, mix. The dose is a tablespoonful once or twice a day, mixed in feed. Another method is to mix the dose into a mass with molasses, honey or glycerin, or put the dose into a large capsule.

**Condition Powder (Darby's).**

Sodium sulphate.....	8 ounces
Sulphur .....	4 ounces
Fenugreek .....	4 ounces
Gentian .....	2 ounces
Black antimony.....	2 ounces

Mix well. A tablespoonful with each meal.

**Arabian Condition Powders.**

Ground ginger, 1 pound; sulphuret of antimony, 1 pound; powdered sulphur, 1 pound; saltpetre, 1 pound. Mix all together and administer in a mash in such quantities as may be required.

**Moiraud's Condition Powder.**

Fern root.....	4 parts
Tansy .....	2 parts
Asafetida .....	1 part
Aloes .....	1 part

Powder and mix. Dose, from 12 drams to 2 ounces.

**Condition Powder (Magoffin's).**

Alum, powdered.....	3 ounces
Saltpetre, powdered.....	3 ounces
Asafetida .....	3 ounces
Copperas .....	5 ounces
Rosin .....	5 ounces
Sulphur .....	5 ounces
Oil-cake meal.....	10 ounces

Reduce to powder and mix well.

Dose: A heaping tablespoonful every morning in wet oats for 6 or 8 days.

**O. K. Condition Powder.**

Cape aloes.....	1 ounce
Gum asafetida.....	1 ounce
Cream tartar.....	2 ounces
Gentian root.....	2 ounces
Jamaica ginger.....	2 ounces
Licorice root.....	2 ounces
Sulphur .....	2 ounces
Saltpetre .....	2 ounces
Fenugreek seed.....	2 ounces

Reduce separately to a fine powder and mix thoroughly in a mill or iron mortar. One tablespoonful twice a day in chop feed.

**Condition Powder (Newmarket Powder).**

Potassium nitrate.....	4 ounces
Flowers of sulphur.....	2 ounces
Cream tartar.....	3 ounces
Powdered ginger.....	1 ounce

Mix well and give 1 ounce (about a heaping tablespoonful) in mush at night.

**Prairie Condition Powder.**

Black sulphuret of anti- mony (in very fine pow- der and pure).....	10 pounds
Flowers of sulphur (very fine) .....	9 pounds
Powdered elm bark.....	4 pounds
Powdered rosin.....	2 pounds
Powdered potassium nitrate	2 pounds
Powdered anise seed.....	1 pound

Thoroughly mix. Dose is a heaping table-  
spoonful once or twice a day.

**Red Horse Condition Powder.**

Fenugreek .....	3 ounces
Gentian .....	2 ounces
Antimony .....	2 ounces
Capsicum .....	2 ounces
Cream tartar.....	2 ounces
Rosin .....	2 ounces
Saltpetre .....	2 ounces
Ginger .....	3 ounces
Myrrh .....	1 ounce

Powder and mix. A tablespoonful twice  
daily.

**Condition Powder for Indigestion.**

Sodium chloride.....	5 ounces
Sodium bicarbonate.....	2 ounces
Calamus root.....	1 ounce
Reduced iron.....	1½ drams

Mix. A tablespoonful with each meal.

**Condition Powder for Indigestion.**

Sodium bicarbonate.....	4 ounces
Powdered ginger.....	4 ounces
Powdered gentian.....	4 ounces

A heaping tablespoonful twice a day before  
feeding.

**Tattersall Condition Powder.**

Tartar emetic.....	1 ounce
Black sulphide of antimony	1 ounce
Angelica root.....	8 ounces
Fennel seed.....	8 ounces
Juniper berries.....	10 ounces
Sugar .....	2 ounces

Powder and mix. A tablespoonful twice  
daily.

**Ten Broeck Condition Powder.**

Rosin .....	2 ounces
Juniper berries.....	2 ounces
Flower of sulphur.....	1 ounce
Potassium nitrate.....	1 ounce
Fenugreek .....	2 ounces
Asafetida .....	1 ounce

Powder and mix. A tablespoonful with each  
meal.

**Tobias' Condition Powder.**

Tartar emetic.....	2 ounces
Ginger .....	2 ounces
Black antimony .....	20 ounces
Asafetida .....	1 ounce
Sulphur .....	10 ounces
Saltpetre .....	31 ounces
Fenugreek .....	35 ounces
Juniper berries.....	25 ounces

Powder each article separately, and mix  
thoroughly. The dose is from 90 grains to 2  
drams.

**Condition Powder.**

Sulphur .....	2 ounces
Glauber salt.....	1 ounce
Black antimony.....	½ ounce
Powdered blood root.....	¼ ounce
Copperas .....	½ ounce
Rosin .....	½ ounce
Asafetida .....	1 dram
Saltpetre .....	½ ounce

Powder and mix well. A tablespoonful in  
feed twice a day.

**Cough Powder.**

Blood root.....	2 ounces
Licorice root.....	4 ounces
Ginger .....	2 ounces
Lobelia .....	1 ounce
Tartar emetic.....	½ ounce
Fenugreek .....	2 ounces
Ipecac .....	¼ ounce
Opium .....	2 drams

Reduce each separately to a fine powder and  
mix thoroughly. Tablespoonful three times a  
day with wet bran. Keep the horse well  
covered with a blanket, also change bedding  
every day.

**Cough Powder.**

Elecampane .....	1½ ounces
Marshmallow .....	1½ ounces
Boneset .....	1½ ounces
Licorice .....	1 ounce
Aniseed .....	1 ounce
Cayenne .....	¼ ounce

Powder and mix. Tablespoonful three times;  
a day with wet oats.

**Cough Powder.**

Licorice root.....	1½ ounces
Marshmallow .....	1½ ounces
Anise .....	1½ ounces
Elecampane .....	4 ounces
Cayenne .....	¼ ounce

Powder and mix. A tablespoonful with each  
meal.

**Cough Powder.**

Black antimony.....	1 ounce
Capsicum .....	1 ounce
Gentian .....	2 ounces
Fenugreek .....	2 ounces
Sulphur .....	2 ounces
Saltpetre .....	2 ounces
Cream of tartar.....	2 ounces
Ginger .....	2 ounces
Licorice .....	3 ounces

Dose, one tablespoonful once or twice a day..

**Cough Powder.**

Powdered aconite leaves ..	6 drams
Powdered digitalis .....	4 drams
Powdered white arsenic ...	4 grains
Powdered anise seed .....	½ ounce

Divide into 6 powders and give one every  
night in feed.

**Cough Powder.**

Potassium nitrate.....	2 ounces
Glycyrrhiza .....	4 ounces
Squill .....	1 ounce
Gentian .....	1 ounce

Reduce each to a fine powder separately,  
then thoroughly mix and divide into 12 pow-  
ders. A powder with breakfast and supper,  
and one to be mixed with contents of nose-  
bag for day use.

**Cough Powder.**

Black antimony.....	4 ounces
Sulphur .....	2 ounces
Bean flour or barley meal	½ pound

A tablespoonful with corn.

**Cough Powder.**

Potassium chlorate.....	4 ounces
Elecampane .....	4 ounces
Lobelia .....	2 ounces
Licorice root.....	6 ounces

Mix. A tablespoonful twice daily.

**Cough Powder.**

Blood root.....	1 ounce
Elecampane .....	5 ounces
Potassium chlorate.....	4 ounces
Licorice root.....	6 ounces

Mix. A tablespoonful with each meal.

**Cough Powder.**

Powdered anise .....	1 ounce
Powdered squill .....	2 ounces
Powdered licorice .....	3 ounces
Ammonium chloride.....	1 ounce
Black antimony.....	1 ounce

Mix. The dose is about one ounce.

**Cough Powder.**

Potassium nitrate, powdered	2 ounces
Glycyrrhiza, powdered.....	4 ounces
Squill, powdered.....	1 ounce
Gentian, powdered.....	1 ounce

Mix thoroughly and divide into 12 powders.  
Give one powder three times a day with food.

**Cough Powder.**

Polypody root.....	2 ounces
Skunk cabbage.....	1 ounce
Pleurisy root.....	1 ounce
Black cohosh.....	1 ounce
Elecampane .....	1 ounce
Beth root.....	1 ounce
Licorice root.....	1 ounce
Ginger .....	1 ounce
Black pepper.....	1 ounce
Lobelia .....	$\frac{1}{4}$ ounce
Cloves .....	$\frac{1}{4}$ ounce

To be powdered and well mixed.

These powders give speedy relief in asthma, hoarseness, shortness of breath, pleurisy, and other bronchial and lung affections. An infusion is made from an ounce of the powder, with a pint of boiling water, and should be sweetened with honey or molasses. Dose of the infusion, a large wineglass when the cough is troublesome.

**Cough Powder.**

Ammonium chloride.....	1 dram
Black antimony.....	1 dram
Powdered anise.....	1 dram
Powdered squill .....	2 drams
Powdered licorice.....	3 drams

For a single dose. To be administered night and morning.

**Iron Tonic Powders.**

Iron sulphate.....	2 ounces
Powdered gentian .....	2 ounces
Powdered caraway seed...	2 ounces

Coriander seeds or ginger may be substituted for the caraway. Copper sulphate is sometimes used in place of iron sulphate, and it seems of special value in cases of chronic nasal discharge. The ordinary dose of either iron or copper sulphate for a horse or ox is two drams, but in the above case can be doubled. As much as five drams of iron sulphate have been given daily for three weeks.

**Diuretic for Horses and Cattle.**

Powdered rosin.....	1 pound
Potassium tartrate.....	$\frac{1}{2}$ pound
Juniper berries.....	$\frac{1}{2}$ pound
Castile soap.....	$\frac{1}{2}$ pound

Cut the soap in thin slices and pulverize all the others, then beat the whole in a mortar to a proper consistence, and give one large spoonful of the powder in bran mash, or wet oats if the animal will not eat the bran, twice daily. In strangury and in suppression of urine, this powder will be found very valuable.

**Tonic Powders for Horses.**

Gentian .....	2 ounces
Ginger .....	2 ounces
Caraway .....	2 ounces
Linseed meal.....	2 ounces
Salt .....	2 ounces
Saltpetre .....	2 ounces

Give a tablespoonful with each meal.

**Colic Powder.**

Alum .....	$\frac{1}{2}$ ounce
Marshmallow .....	$\frac{1}{2}$ ounces
White oak bark.....	$\frac{1}{2}$ ounces
Juniper berries.....	$\frac{1}{2}$ ounces

Mix well. Give as one dose.

**Sedative Powder.**

Asafetida .....	$\frac{1}{4}$ ounce
Valerian .....	$\frac{1}{2}$ ounce
Digitalis .....	1 dram

Mix. Give as one dose.

This may also be made into a ball with honey.

**Diarrhoea Powder.**

Iron sulphate.....	1 ounce
Alum powder.....	1 ounce
Oak bark.....	2 ounces
Calamus root.....	2 ounces
Rye flour.....	4 ounces

Powder and mix. Give a tablespoonful every 2 hours.

**Dysentery Powder.**

Opium .....	75 grains
Marshmallow .....	1 ounce

Divide into 5 powders.

Give one powder every 5 hours.

**Dysentery Powder.**

Tannic acid.....	$\frac{1}{2}$ ounce
Licorice root.....	1 ounce

Mix and divide into 5 powders.

Give one powder every 5 hours.

**Diarrhoea Powder.**

Opium .....	12 grains
Camphor .....	$\frac{1}{2}$ dram
Catechu .....	1 dram

Powder and mix. Make one powder.

One powder every five hours.

**Diarrhoea Powder.**

Opium .....	12 grains
Camphor .....	1 dram
Ginger .....	2 drams
Castile soap.....	2 drams
Anise .....	3 drams
Licorice .....	2 drams

One dose. Give every 5 hours.

**Laxative Powder.**

Aloes .....	2 drams
Magnesium sulphate.....	2 ounces
Flaxseed meal.....	2 ounces

Mix. Give as one dose.

**Laxative Powder.**

Glauber salt.....	2 ounces
Epsom salt.....	2 ounces
Oil-cake meal.....	4 ounces

One dose.



**Tonic Powder.**

Iron carbonate..... 4 ounces  
 Gentian ..... 4 ounces  
 Licorice root..... 8 ounces  
 Mix. A tablespoonful twice daily.

**Tonic Powder.**

Iron sulphate..... 2 ounces  
 Gentian ..... 4 ounces  
 Cinchona ..... 1 ounce  
 Licorice root..... 5 ounces  
 Powder and mix. A tablespoonful each morning.

**Tonic Powder.**

Poplar bark..... 4 ounces  
 Iron sulphate..... 4 ounces  
 Cinchona ..... 4 ounces  
 Powder and mix. A tablespoonful every other morning.

**Tonic Powder.**

Iron carbonate..... 4 ounces  
 Gentian ..... 4 ounces  
 Cinchona ..... 2 ounces  
 Licorice ..... 6 ounces  
 Powder and mix. A tablespoonful every morning.

**Tonic Powder.**

Iron sulphate..... 4 ounces  
 Cinchona ..... 4 ounces  
 Poplar bark..... 4 ounces  
 Gentian ..... 4 ounces  
 Elecampane ..... 4 ounces  
 Ginger ..... 1 ounce  
 Powder and mix. A tablespoonful every morning.

**Anodyne Drench.**

Opium ..... 1 ounce  
 Cloves ..... 1 ounce  
 Ginger ..... 1 ounce  
 Brandy or whisky..... 1 quart

Digest for 3 days, shaking daily.  
 Dose: One sixth to one fourth pint.

**Antispasmodic and Carminative Drench.**

Spirit of camphor..... 1 ounce  
 Tincture of opium..... 1 ounce  
 Oil of peppermint..... 30 drops  
 Warm water..... 1 pint  
 Mix and give as one dose. In a violent attack add 1 ounce of oil of turpentine.

**Antispasmodic and Carminative Drench.**

Laudanum ..... 1 ounce  
 Spirit of nitrous ether.... 4 ounces  
 Oil of juniper..... 1 ounce  
 Tincture of benzoin..... 2 ounces  
 Oil of peppermint..... 1 dram  
 Mix. Give one fourth in warm water or gruel and repeat in 3 hours if necessary.

**Drench for Blind Stagers.**

Epsom salt..... 8 ounces  
 Water ..... 24 ounces  
 One dose.

**Drench for Colic.****Spasmodic or Flatulent Colic.**

Spirit of nitrous ether.... 2 ounces  
 Tincture of opium..... 1 ounce  
 Decoction of aloes..... 4 ounces  
 Mix with a pint of warm water.

**Drench for Colic.**

Opium, 1 dram; horseradish, 2 ounces; capsicum, 1 ounce; spirit of nitrous ether, 1 pound; macerate for 14 days; dose, 1 ounce, with two ounces of spirit of nitrous ether, every two hours as long as necessary.

**Colic Cure.**

Spirits turpentine, 1 ounce; laudanum, 1 ounce; mix; and for a horse, give all for a dose, by putting it into a bottle with half a pint of warm water. If relief is not obtained in an hour, repeat the dose, adding half an ounce of the best powdered aloes, well dissolved.

**Humley's Colic Cure.**

Laudanum ..... 1 ounce  
 Essence of peppermint.... 1 ounce  
 Spirit of nitrous ether.... 1 ounce  
 Ether ..... 1 ounce  
 Sodium bicarbonate..... ½ ounce  
 Whisky ..... 4 ounces  
 Linseed oil..... 4 ounces

Divide into 4 parts and give one part in a pint of warm water every hour.

**Colic Cure.**

Tincture of opium ..... 1 ounce  
 Tincture of nux vomica ... 1 ounce  
 Tincture of arnica ..... 1 ounce  
 Tincture of valerian, ethereal ..... ½ ounce  
 Water ..... 1 pint  
 Mix and give as one dose.

**Drench for Flatulent Colic.**

Tincture of opium ..... 1 ounce  
 Tincture of myrrh ..... 1 ounce  
 Sulphuric ether..... 6 drams  
 Tepid water..... 1 pint

Repeat in one hour if relief is not obtained.

**Colic Cure.**

Chlorodyne ..... 1 ounce  
 Spirit of nitrous ether.... 2 fl. ounces  
 Linseed oil..... 13 fl. ounces  
 One dose, repeat in 2 hours if necessary.

**Colic Cure.**

Tincture of opium ..... 1 ounce  
 Ether ..... 1 ounce  
 Alcohol ..... 2 ounces  
 Oil of anise..... 30 drops  
 Give a tablespoonful in a pint of warm water every 15 to 30 minutes.

**Drench for Colic Caused by Constipation.**

Epsom salt..... 8 ounces  
 Rye flour..... 2 ounces  
 Warm water..... 1½ pints  
 One dose, repeat in ½ hour.

**Colic Cure.**

Tincture of opium..... ½ ounce  
 Ether ..... 1 dram  
 Chloroform ..... 1 dram  
 Warm water..... 1 pint  
 One dose, repeat in one hour.

**Colic Cure.**

Tincture of opium ..... 1 ounce  
 Tincture of ginger ..... 1 ounce  
 Spirit of nitrous ether.... 1 ounce  
 Chloroform ..... 1 ounce  
 Give in a pint of warm water.

**Cure for Colic Caused by Constipation.**

Castor oil..... 8 ounces  
 Linseed oil..... 8 ounces  
 Oil of turpentine..... ½ ounce  
 Mix. Give as one dose.

**Colic Cure.**

Tincture of opium..... 1 ounce  
 Oil of turpentine..... ½ ounce  
 Spirit of nitrous ether.... 2 ounces  
 Linseed oil..... 8 ounces  
 Shake well. Repeat in 1 hour.

**Cough Drench.**

Linseed oil, 2 ounces; solution of potash, 10 drops; treacle, 1 ounce; soft water, 10 ounces. Mix.

**Cough Draught.**

Oil of anise..... 5 drops  
Camphor ..... 20 grains  
Extract of licorice..... 1 dram  
Tincture of opium..... 3 drams  
Spirit ..... ½ ounce  
Water to..... 3 ounces

Dissolve the oil and camphor in the spirit and add to the other ingredients, previously well mixed.

**Drench for Diabetes.**

Sulphuret of potash, 2 drams; uva ursi, 4 drams, oak bark, 1 ounce; catechu, 2 drams; opium, ½ dram. In strong chamomile tea.

**Diarrhoea Drench.**

Prepared chalk, 1 ounce; catechu, 2 drams; opium, 1 dram; ginger, 1 dram; rub together with the contents of 1 egg, and add ½ pint of this gruel.

**Drench for Diarrhoea.**

Laudanum, 1 ounce; ether, 1 ounce; tannin, 1 scruple; given in gruel or ale. This is to be given when the purging has gone on for some days, or when laxatives have been given without the desired effect.

**Diarrhoea Cure.**

Laudanum ..... ½ ounce  
Oil of peppermint..... 30 drops  
Linseed oil..... 8 ounces

Mix.

**Diuretic Drench.**

Potassium nitrate..... 1 ounce  
Fluidextract of buchu..... 2 ounces  
Spirit of nitrous ether..... 4 ounces  
Anise water..... 9 fl. ounces

One or two tablespoonfuls night and morning.

**Drench for Fever.**

Saltpetre ..... 2 drams  
Tartar emetic..... ½ dram  
Warm water or thin gruel 12 ounces

Give once or twice a day.

**Drench for Fever.**

Spirit of nitrous ether... 1 ounce  
Spirit of mindererus..... 6 ounces  
Water ..... 4 ounces

Give twice a day.

**Gripe Medicine.**

Chloral hydrate..... 1 dram  
Extract of cannabis indica 2 drams  
Oil of turpentine..... 2 ounces  
Aromatic spirit of ammonia 1 ounce  
Solution of aloes (1-4).... 2 ounces  
Linseed oil, enough to make ..... 6 ounces

A drench to be given in ½ to 1½ pints of linseed oil.

**Inflammation of the Lungs.**

Tincture of opium..... ½ ounce  
Tincture of aconite root... ¼ ounce  
Tincture of belladonna... ¼ ounce  
Spirit of nitrous ether... 1 ounce  
Warm water, enough to make ..... 1 pint

One ounce every two or three hours.

**Drench for Glanders or Farcy.**

Fluidextract buckthorn... ½ ounce  
Sodium chloride..... 2 drams  
Sodium bicarbonate..... 1 dram  
Anise water..... 8 ounces

Mix and dissolve. Give three times a day.

**Drench for Influenza.**

Chlorodyne ..... 1 ounce  
Spirit of nitrous ether... 2 ounces  
Solution of ammonium acetate ..... 2 ounces  
Water ..... 12 ounces

Mix. Give every 3 hours.

**Purgative Drench.**

Aloes ..... 1 ounce  
Soap ..... 2 drams  
Salt of tartar..... 1 dram  
Water ..... 1 pint

In apoplexy or staggers.

**Purgative Drench.**

Linseed tea, 1 pint; honey, 2 ounces; syrup of poppies, 2 ounces; linseed oil, 4 ounces.

**Stronger Purgative Drench.**

In inflammation of the brain.

Barbadoes aloes..... 2 ounces  
Gum arabic..... 1 ounce

Powder and mix them, and pour on them a pint of boiling water. Take 10 grains of croton oil, and add to it gradually 4 ounces of the above solution. Repeat this dose every 6 hours till it operates.

**Heave Powder.**

Antimony, powdered..... 1 ounce  
Fenugreek, powdered..... 1 ounce  
Ginger root, powdered..... 2 ounces  
Copperas, powdered..... 1 ounce  
Alum, powdered..... 1 ounce  
Camphor gum, powdered... 1 ounce  
Sulphur, powdered..... 1 ounce  
Gunpowder, powdered..... 2 ounces  
Saltpetre, powdered..... 1 ounce

Mix well. Give a tablespoonful with each meal.

**Cure for Heaves.**

Tincture of myrrh ..... ½ ounces  
Tincture of cantharides ... 2 ounces  
Oil of turpentine..... 2 ounces  
Tincture of iodine ..... ½ ounces  
Tincture of capsicum ..... ½ ounce  
Ammonia water..... 1¼ ounces  
Chloroform ..... ¼ ounce  
Alcohol ..... 2 ounces

Bathe throat with hot water; then apply medicine. This should be used once in three days, until five applications have been made.

**Heave Powder.**

Rosin weed..... 3 ounces  
Lobelia ..... 3 ounces  
Elecampane root..... 3 ounces  
Sodium sulphate..... 3 ounces  
Gentian root..... 1 ounce  
Blood root..... 1 ounce  
Tartar emetic..... 3 drams  
Conium maculatum..... 1 ounce  
Alum ..... ½ ounce  
Fenugreek ..... 2 ounces  
Linseed ..... 5 ounces

Mix well and give a tablespoonful 3 times a day.

**Liquid Cough and Heave Cure.**

Oil of tar..... 2½ ounces  
Fluidextract of elecampane ½ ounce  
Fluidextract of lobelia ... ¼ ounce  
Fluidextract of squill ..... ½ ounce  
Black molasses..... 2¼ ounces

Give one half morning and night.

**Remedy for Heaves.**

Balsam of fir..... 4 ounces  
 Balsam of copaiba..... 4 ounces  
 And mixed with calcined magnesia sufficiently thick to make it into balls; give a middling-sized ball night and morning for a week or ten days.

**Remedy for Heaves.**

Calcined magnesia, balsam of fir, balsam of copaiba, of each 1 ounce; spirit turpentine, 2 ounces; put all into 1 pint of best cider vinegar; give for a dose 1 tablespoonful in feed, once a day for a week, then every other day for two or three months. Wet the hay with brine, also the other feed. The horse will cough more at first, but looser and looser till cured.

**Heave Powder.**

Elecampa..... 8 ounces  
 Skunk cabbage..... 8 ounces  
 Wild turnip..... 8 ounces  
 Lobelia herb..... 8 ounces  
 Licorice..... 8 ounces

Mix well and give a tablespoonful with each meal.

**Heave Powder.**

Tartar emetic..... 1 ounce  
 Lobelia..... 2 ounces  
 Skunk cabbage..... 4 ounces  
 Elecampa..... 4 ounces  
 Licorice root..... 5 ounces

Mix and give a tablespoonful 3 times a day.

**Heaves Remedy.**

Saltpetre..... 1 ounce  
 Indigo.....  $\frac{1}{2}$  ounce  
 Rain water..... 4 pints

Give one pint twice a day.

**Worm Balls.**

Calomel, 8 grains; arsenic, 8 grains; tin filings, 1 ounce; Venice turpentine,  $\frac{1}{2}$  ounce; mix, and give every morning, fasting, for a fortnight.

**Worm Balls.**

Tartar emetic, 1 dram; common mass, 6 linseed meal and treacle, to form a ball; 1 every morning an hour before feeding.

**Worm Balls.**

Common salt,  $\frac{1}{2}$  ounce; gentian, 2 drams; rust of iron, 2 drams; savin, 1 dram; treacle, to form a ball; to be given every morning for a week; then a purging ball.

**Worm Balls.**

Tartar emetic, 11 dram; common mass, 6 drams; to be given for 6 mornings and a purging ball on the seventh.

**Worm Balls.**

Barbadoes aloes, 6 drams; ginger,  $\frac{1}{2}$  drams; oil of wormwood, 20 drops; sodium carbonate, 2 drams; syrup, to form a ball;  $\frac{1}{2}$  dram or 1 dram of calomel may be added, or given the previous night; to be repeated at intervals of 10 days if required.

**Worm Ball for Horses.**

Calomel..... 1 dram  
 Venice turpentine.....  $\frac{1}{2}$  ounce  
 Oil of savin..... 2 drams  
 Indian pink root,  
 Wormseed, in powder,  
 of each..... 2 drams

Mix, and make into one ball, with molasses, and give at night, after having fed through the day with bran mashes and no hay. Directly follow the ball with linseed oil, 1 pint in hot gruel, which will warm the oil.

**Worm Balls.**

Asafetida..... 2 drams  
 Calomel.....  $\frac{1}{2}$  drams  
 Savin.....  $\frac{1}{2}$  drams  
 Oil of wormwood..... 20 drops  
 Syrup, enough to make a ball.

Give at night and a physic ball in the morning.

**Mercurial Balls for Worms.**

Calomel,  
 Castile soap, of each..... 1 dram  
 Wormseed, in powder.....  $\frac{1}{2}$  ounce

Make them into a ball with syrup of buckthorn. This ball should be given at night and followed in the morning by a purgative.

**Worm Balls.**

Powdered tartar emetic..... 4 drams  
 Powdered jalap.....  $\frac{1}{2}$  ounces  
 Powdered ginger..... 2 drams  
 Powdered Barbadoes aloes 2 ounces  
 Powdered castile soap.....  $\frac{1}{2}$  ounce  
 Oil of cloves.....  $\frac{1}{2}$  dram  
 Simple syrup..... 1 ounce  
 Tragacanth mucilage.....  $\frac{1}{2}$  ounce

Make a mass and divide into 1 ounce balls. Give a ball after a very light meal at night, repeating in two or three days if necessary. A tonic ball should be given once a week, or else a tablespoonful of tonic and condition powder every other day to horses which are subject to worms.

**Worm Powder.**

Santonin..... 1 dram  
 Tartar emetic.....  $\frac{1}{4}$  dram  
 Powdered pink root..... 1 dram  
 Powdered jalap..... 2 drams

One dose. Give at night and a physic in the morning.

**Worm Powder.**

Santonin..... 1 dram  
 Calomel.....  $\frac{1}{2}$  dram  
 Powdered wormseed..... 2 drams  
 Powdered ginger..... 2 drams

Mix and give one dose in bran mash.

**Worm Powder.**

Oil of tansy..... 4 drams  
 Crude petroleum..... 4 drams  
 Asafetida.....  $\frac{1}{2}$  ounce  
 Aloes..... 1 ounce  
 Rye flour..... 2 ounces  
 Wormwood seed..... 3 ounces  
 Water, enough to make a mass.

A ball of the size of a hen's egg every 2 hours.

**Lebas' Worm Powder.**

Sulphur.....  $\frac{1}{2}$  ounces  
 Metallic mercury.....  $\frac{1}{2}$  ounce

Triturate together until the mercury is extinguished, then add:

Male fern.....  $\frac{1}{2}$  ounce  
 Rhubarb.....  $\frac{1}{2}$  ounce  
 Tansy.....  $\frac{1}{2}$  ounce  
 Gentian.....  $\frac{1}{2}$  ounce  
 Wormwood..... 1 dram  
 Savin..... 1 dram  
 Castor seeds..... 1 dram  
 Aloes..... 1 dram

Powder and mix. Dose, from 12 drams to 2 ounces.



**Worm Powder.**

Tartar emetic.....	2 drams
Ginger .....	$\frac{1}{2}$ dram
Linseed meal.....	1 ounce

Mix and give at one dose.

**Worm Powders.**

Sulphur .....	2 drams
Areca nut.....	2 drams
Tartar emetic.....	$\frac{1}{2}$ dram
Santonin .....	$\frac{1}{2}$ dram
Powdered croton seeds....	$\frac{1}{2}$ dram
Ginger .....	2 drams
Common salt.....	1 ounce

Make a powder.

A powder to be given twice a week. If the bowels are regular, omit the croton seeds, and replace with 20 grains of calomel.

**Worm Remedy.**

Calomel .....	1 dram
Tartar emetic.....	20 grains
Aloes .....	4 drams
Fenugreek .....	4 drams

Make a bolus, and give at night.

**For Long Round Worms.**

Tartar emetic, 1 dram, ginger,  $\frac{1}{2}$  dram, tin filings, 6 drams, linseed meal, 1 dram, palm oil, to form a ball.

**For Long Round Worms.**

Asafetida, 4 ounces, gentian, 2 ounces, strong mercurial ointment, 1 ounce, honey, to form a mass for 16 balls; 1 or more every morning.

**Scours and Pin Worms.**

White ash bark burnt into ashes, and make into a rather strong lye; then mix  $\frac{1}{2}$  pint of it with 1 pint warm water, and give all two or three times daily. This will certainly kill off the worms, which are the cause, in most instances, of scours and looseness.

**Tape Worm Balls.**

Areca nut, powdered.....	$\frac{1}{2}$ ounce
Male fern.....	$\frac{1}{2}$ ounce
Pumpkin seed.....	1 ounce

Powder and make into a ball. Give at night and a purgative in the morning.

**Injection for Pin Worms.**

Tobacco leaves.....	4 ounces
Quassia chips.....	4 ounces
Water .....	1 gallon

Make an infusion and inject a pint twice daily.

**Horse Liniment.**

Alcohol, 95 per cent.....	8 ounces
Oil of turpentine .....	8 ounces
Oil of sassafras .....	1 ounce
Oil of pennyroyal .....	1 ounce
Oil of origanum .....	1 ounce
British oil.....	1 ounce
Tincture of arnica .....	1 ounce
Tincture of camphor .....	1 ounce
Ammonia water.....	1 ounce

Mix them, and make a liniment.

**Horse Liniment.**

Oil of sassafras .....	8 fl. ounces
Oil of wintergreen .....	2 fl. ounces
Sulphuric ether.....	8 fl. ounces
Tincture of aconite root..	8 ounces
Camphor .....	8 ounces
Alcohol, enough to make..	1 gallon

Use as it is, or color red if desired with red sanders or alkanet root. The tincture of aconite should be strongly alcoholic.

**Horse Liniment.**

Linseed oil .....	4 ounces
Turpentine .....	4 ounces
Barbadoes tar.....	1 ounce
Crude petroleum.....	1 ounce

Mix well.

**Horse Liniment.**

Oil of turpentine .....	$\frac{1}{2}$ dram
Oil of thyme .....	$\frac{1}{2}$ dram
Oil of amber, crude.....	$\frac{1}{2}$ dram
Black oil.....	1 dram
Kerosene oil.....	3 drams
Water .....	26 drams
Soap .....	35 grains
Caustic potash.....	3 grains

The soap should be placed together with the alkali in a flask and then dissolved in 2 ounces of hot water and shaken vigorously. When the mixture has once assumed a creamy consistency, the oils are gradually added.

**Horse Liniment.**

Tincture of arnica.....	16 ounces
Oil of turpentine.....	4 ounces
Seneca oil.....	4 ounces
Petroleum .....	5 ounces
Water of ammonia.....	4 ounces

Mix the ammonia and the petroleum, shake well and then add the other ingredients.

**Horse Liniment.**

Crude petroleum.....	1 ounce
Oil of turpentine.....	1 ounce
Crude fusel oil.....	1 ounce
Camphor .....	$\frac{1}{2}$ ounce
Lard oil.....	1 ounce

Dissolve the camphor in the turpentine, add the other ingredients.

**Horse Liniment.**

Oil of origanum .....	1 ounce
Oil of spike .....	1 ounce
Oil of linseed .....	1 ounce
Oil of turpentine .....	1 ounce
Oil of cedrat .....	1 ounce
Ammonia water (26 per cent) .....	$\frac{1}{2}$ ounce
Tincture of aconite.....	$\frac{1}{2}$ ounce

Mix the oils and add the ammonia water, then the tincture. For external use only, apply to affected parts by brisk rubbing once or twice a day.

**Torry Horse Liniment.**

Oil of wormwood .....	1 ounce
Oil of fireweed .....	1 ounce
Oil of hemlock .....	1 ounce
Alcohol .....	1 ounce

Mix.

**Horse Liniment.**

Carbolic acid, crude.....	2 ounces
Benzine .....	15 ounces
Oil of turpentine .....	15 ounces
Oil of tar .....	4 drams
Oil of spike .....	4 drams
Camphor .....	2 drams
Capsicum .....	2 drams

Macerate for a few days and strain.

**Horse Liniment.**

Soap liniment.....	4 pints
Camphor .....	8 ounces
Chloroform .....	16 fl. ounces
Alcohol, enough to make..	1 gallon

Use carefully and cover with flannel after applying.

**Horse Liniment.**

Oil of origanum .....	8 fl. ounces
Oil of cajuput .....	4 fl. ounces
Alcohol .....	$\frac{3}{4}$ pints

A good liniment for lameness.

**Horse Liniment.**

Olive oil.....	2 pints
Camphor .....	2 ounces
Oil of origanum .....	1 ounce
Oil of sassafras .....	1 ounce
Water of ammonia.....	8 ounces

Dissolve the camphor in the oils and add the ammonia.

**Horse Liniment.**

Menthol (crystals).....	1 dram
Oil of origanum .....	1 ounce
Oil of hemlock .....	1 ounce
Oil of sassafras .....	1 ounce
Oil of turpentine .....	1 ounce
Camphor .....	1 ounce
Tincture of capsicum .....	$\frac{1}{2}$ ounce
Tincture of myrrh .....	$\frac{1}{2}$ ounce
Tincture of benzoin com- pound .....	$\frac{1}{2}$ ounce
Alcohol .....	5 ounces
Crude petroleum, enough to make.....	1 pint

Dissolve the oils and camphor in the alcohol, then add the other ingredients. The petroleum should be fresh and free from gas and water.

**Horse Liniment.**

Ammonia .....	4 ounces
Sweet oil.....	4 ounces
Linseed oil.....	4 ounces
Spirit turpentine.....	1 ounce

Mix the ammonia and sweet oil, shake well and add the other ingredients.

**Horse Liniment.**

Oil of sassafras.....	8 fl. ounces
Chloroform .....	16 fl. ounces
Camphor .....	8 ounces
Olive oil.....	$3\frac{1}{2}$ pints
Oil of turpentine, suffi- cient to make.....	1 gallon

Mix.

**Ammoniated Liniment.**

Lard .....	3 ounces
Oil of turpentine.....	1 ounce
Olive oil .....	1 ounce
Spirit of camphor.....	4 drams
Ammonia water.....	1 dram

Melt the lard and add the turpentine and olive oil; when cold add the spirit and ammonia. A good liniment in sciatica, lumbago, etc.

**Iodide of Ammonium Liniment.**

Tincture of iodine.....	4 fl. ounces
Sodium hyposulphite.....	1 fl. ounce
Water .....	4 fl. ounces
Ammonia water.....	14 fl. ounces
Chloroform .....	16 fl. ounces
Tincture of aconite root...	12 fl. ounces
Alcohol .....	78 fl. ounces

Dissolve the sodium hyposulphite in the water and add the tincture of iodine; then add the ammonia water; finally add the chloroform, tincture of aconite root and alcohol, previously mixed.

**Arnica Liniment.**

Tincture of arnica.....	8 ounces
Camphorated soap liniment	16 ounces
Tincture of aconite.....	1 ounce
Oil of turpentine.....	5 ounces
Tincture of capsicum.....	1 ounce

Mix. Shake before using.

**Black Oils.**

Olive oil.....	1 pint
Oil of turpentine.....	2 ounces
Sulphuric acid.....	6 drams

Mix the olive oil and turpentine and add the sulphuric acid, stirring all the time. Allow to cool before bottling.

**Black Oils.**

Oil of turpentine.....	1 pint
Rape oil.....	3 pints
Oil of vitriol.....	$\frac{1}{4}$ pound

Agitate well together with care, then add of Barbadoes tar 3 ounces; again agitate well, and in 10 days decant the clear portions. Linseed oil is preferred for the above by many persons.

**Black Oils.**

Alcohol .....	2 ounces
Tincture of arnica.....	2 ounces
British oil.....	2 ounces
Oil of tar.....	2 ounces
Add slowly, Sulphuric acid.....	$\frac{1}{2}$ ounce
Mix and mark "shake thoroughly."	

**British Oils.**

Oil of turpentine.....	8 ounces
Linseed oil .....	8 ounces
Oil of amber .....	4 ounces
Oil of juniper .....	4 ounces
True Barbadoes tar.....	3 ounces
Petroleum .....	1 ounce

Mix well.

**Bracing Liniment.**

Cider vinegar.....	4 ounces
Ammonia water.....	2 ounces
Oil of origanum .....	1 ounce
Oil of turpentine .....	1 ounce
Dry white lead, in powder	1 ounce

Put them in a bottle and shake them well together every time when used. Apply twice daily, rubbing well each time.

**Camphorated Lead Liniment.**

Lead acetate.....	2 ounces
Oil rape (fresh).....	8 ounces
Camphor .....	2 drams

Dissolve the camphor in the oil and gradually stir in the lead acetate.

For horses' galled shoulders.

**Carbolic Liniment.**

Pure carbolic acid.....	2 drams
Camphorated oil.....	2 ounces
Oil of cedar.....	1 ounce
Cottonseed oil.....	5 ounces

Mix.

**Compound Liniment of Chloroform.**

Chloroform .....	2 fl. ounces
Tincture of aconite root...	$\frac{1}{2}$ fl. ounce
Ammonia water.....	$\frac{1}{2}$ fl. ounce
Olive oil.....	5 fl. ounces

Mix the ammonia and olive oil, and add the other ingredients. Shake before using.

**Creosote Liniment.**

Creosote .....	2 ounces
Oil of turpentine.....	4 ounces
Olive oil.....	8 ounces

Mix.

In fistulous sores, festering wounds, etc.

**Electric Liniment.**

Powdered capsicum.....	1 ounce
Camphorated oil.....	$1\frac{1}{2}$ ounces
Oil of turpentine.....	16 ounces

Let stand for 7 days and filter, beat the filtrate with the contents of 3 eggs—albumen and yolk—until they are thoroughly mixed, and add:

Acetic acid.....	$2\frac{1}{2}$ ounces
Water .....	16 ounces

A good liniment for lame or stiff legs.

**Detergent Liniment.**

Oil of turpentine.....	1 ounce
Sulphuric acid.....	2 drams
Mix in a large vessel and when cool add	
Linseed oil.....	2 ounces

**Embrocation.**

Barbadoes tar.....	2 ounces
Oil of turpentine.....	2 ounces
Opodeldoc .....	4 ounces
After fomenting with hot vinegar and Goulard's solution.	

**English Stable Embrocation.**

Oil of spike.....	2 ounces
Ammonia water.....	2 ounces
Oil of turpentine.....	2 ounces
Sweet oil.....	1½ ounces
Oil of amber.....	1½ ounces
Oil of origanum.....	1 ounce
Mix the ammonia and sweet oil, then add the other oils, shaking well.	

**Heyle's Horse Embrocation.**

Oil of spike.....	1 ounce
Ammonia water.....	1 ounce
Camphorated oil.....	2 ounces
Oil of origanum.....	½ ounce
Tincture of opium.....	½ ounce
Spirit turpentine.....	1 ounce
Olive oil.....	2 ounces
Mix the ammonia and oils, shake well, and add the other ingredients.	

**Barbed Wire Fence Liniment.**

Linseed oil.....	16 fl. ounces
Potassium nitrate.....	1 av. ounce
Lead acetate.....	1 av. ounce
Sulphuric acid.....	1 av. ounce
Carbolic acid.....	½ av. ounce
Mix the oil with the saltpetre and sugar of lead (in fine powder) and slowly add the sulphuric acid, stirring continually. When cold pour off from the dregs and add the carbolic acid. Apply with a feather twice a day. Do not wash the sore at all.	

**Barbed Wire Fence Liniment.**

Carbolic acid, liquefied...	½ ounce
Fluidextract of arnica.....	1 fl. ounce
Common black oil.....	15 fl. ounces

Apply twice a day with a feather, washing sores with castile soap and drying well before applying.

**"Fence Wire Cut" Liniment.**

Copper sulphate.....	1 av. ounce
Ferrous sulphate.....	1 av. ounce
Zinc sulphate.....	½ av. ounce
Alum .....	½ av. ounce
Water .....	16 av. ounces
Apply twice a day with a sponge. This is not as much of a liniment as a lotion.	

**Embrocation for Stiffness.**

Oil of cajuput.....	3 ounces
Camphor .....	2 ounces
Oil of turpentine.....	10 ounces
Yellow wax, in shavings..	8 ounces
Melt the wax in the turpentine by gentle heating in a water bath, making up to 18 ounces with turpentine when finished; then add the camphor and oil of cajuput, previously mixed together to form a solution.	

**Liniment for Colic.**

Oil of turpentine.....	4 fl. ounces
Ammonia water.....	1 fl. ounce
Alcohol .....	15 fl. ounces
Mix and apply to the horse's abdomen.	

**Liniment for Contracted Cords and Stiffness of Legs.**

Tannic acid.....	3 drams
Spirit of nitrous ether....	3 ounces
Tincture of hyoscyamus ..	3 ounces
Tincture of iodine .....	2 ounces
Alcohol,	
Extract of witchhazel, of each, enough to make...	1 pint
Apply on side of of cords, from above knee to foot, twice a day for three weeks. Rub well in. Wash leg with a mixture of hot vinegar 1 pint and common salt ¼ pint, before using liniment, to remove gum and grease.	

**Hungarian Liniment.**

Camphor, pulverized.....	4 ounces
Pimenta, pulverized.....	2 ounces
Flour of mustard.....	4 ounces
Bruised garlic.....	2 ounces
Cantharides, pulverized...	1 ounce
These ingredients are digested for 24 hours in:	

Vinegar .....	8 ounces
Rectified spirit.....	10 ounces
Strain and bottle.	

**Hemlock Liniment.**

Oil of hemlock.....	1 ounce
Linseed oil.....	1 pint

**Liniment for Sore Throat.**

Mercurial ointment.....	2 ounces
Suet .....	3 ounces
Oil of henbane.....	5 ounces
Mix together the suet and oil on a water bath; when nearly cold, mix with the ointment.	
Apply to the throat every morning and evening.	

**Liniment for Dysentery.**

Tincture of capsicum.....	1 ounce
Spirit of mustard .....	1½ ounces
Spirit of camphor .....	8 ounces
Apply a tablespoonful to the abdomen 3 times daily, rubbing for 5 minutes with a woolen cloth.	

**Indian Liniment.**

Tincture of capsicum.....	1 ounce
Oil of origanum .....	½ ounce
Oil of sassafras .....	½ ounce
Oil of pennyroyal .....	½ ounce
Oil of hemlock .....	½ ounce
Alcohol .....	1 quart
Mix well.	

**French Liniment.**

Oil of turpentine.....	8 ounces
Linseed oil.....	8 ounces
Oil of juniper.....	4 ounces
Barbadoes tar.....	3 ounces
Oil of amber .....	4 ounces
Oil of seneca .....	1 ounce
Mix, shake and apply.	

**Magic Liniment.**

Oil of origanum .....	1 ounce
Oil of spike .....	1 ounce
Oil of linseed .....	1 ounce
Oil of turpentine .....	1 ounce
Oil of cedar .....	1 ounce
Ammonia water, 26 per cent .....	½ ounce
Tincture of aconite.....	½ ounce
Mix the oils and then the ammonia water and tincture of aconite.	
Shake the bottle and apply over affected parts by briskly rubbing once or twice a day.	



**Horse and Cattle Lotion.**

Camphor .....	1 pound
Oil of origanum.....	1 pint
Water of ammonia.....	1 pint
Sweet oil.....	3 pints
Crude petroleum, enough to make.....	1 gallon

Dissolve the camphor in the sweet oil and add the other components.

**Liniment Haemostatic and Antiseptic.**

Tannic acid.....	1 ounce
Pure carbolic acid.....	1 ounce
Water .....	4 ounces
Alcohol .....	8 ounces

Mix and dissolve. Apply with brush or soft sponge.

**Nerve and Bone Liniment.**

Oil of origanum .....	4 ounces
Oil of rosemary .....	4 ounces
Oil of amber .....	4 ounces
Oil of hemlock .....	4 ounces
Spirit turpentine.....	2 gallons
Linseed oil.....	3 gallons

Mix and color with anchusa root.

**Nerve and Bone Liniment.**

Camphor .....	12 ounces
Oil of sassafras .....	8 fl. ounces
Oil of origanum .....	8 fl. ounces
Ammonia water.....	12 fl. ounces
Chloroform .....	8 fl. ounces
Sweet oil.....	3 pints
Seneca oil (crude petro- leum) .....	3 pints

Mix the ammonia and sweet oil, add the chloroform in which the camphor and oils c. sassafras and origanum have been dissolved, then the oil of seneca.

**Nerve and Bone Liniment.**

Ammonia water.....	1 ounce
Olive oil, pure.....	2 ounces
Camphorated oil.....	1 ounce
Oil of rosemary.....	$\frac{1}{2}$ ounce

Mix them, and shake the mixture well.

**Nerve and Bone Liniment.**

Take beef's gall, 1 quart, alcohol, 1 pint, volatile liniment, 1 pound, spirit of turpentine, 1 pound, oil of origanum, 4 ounces, ammonia water, 4 ounces, tincture of cayenne,  $\frac{1}{4}$  pint, oil of amber, 3 ounces, tincture of Spanish flies, 6 ounces. Mix.

**Liniment Against Flies.**

Oil of pennyroyal .....	4 drams
Oil of lavender .....	2 drams
Carbolic acid.....	1 dram
Fish oil.....	1 pint

Mix and cover the horse's back with it.

**Exeter Oil.**

Rape oil.....	$1\frac{1}{2}$ pints
Green olive oil.....	$\frac{1}{2}$ pint
Oil of wormwood.....	$\frac{1}{2}$ dram
Oil of rosemary .....	$\frac{1}{2}$ dram
Oil of origanum .....	$\frac{1}{2}$ dram

Mix.

**Exeter Oil.**

Green olive oil.....	16 pounds
Euphorbium .....	1 ounce
Mustard seed.....	1 ounce
Castor .....	1 ounce
Pellitory .....	1 ounce

Digest and strain.

**Mange Cure.**

Creosote .....	2 ounces
Green soap.....	10 ounces
Alcohol .....	6 ounces

Mix and apply to the affected parts.

**Oil for Mange.**

Oil of turpentine.....	1 pint
Linseed oil.....	2 pints
Sulphuric acid.....	2 ounces

Add the acid to the turpentine slowly and cautiously, stirring with a glass rod; then add the linseed oil.

Rub in 4 to 8 ounces with a brush every second day.

**For Mange and Scabies in Animals.**

Carbolic acid.....	10 grams
Rape oil.....	150 grams
Petroleum .....	50 grams
Tincture of aloes.....	20 grams

Apply with brush.

**Liniment for Mange.**

Olive oil.....	2 ounces
Sulphur .....	1 ounce
Goulard's extract.....	2 ounces

Mix and shake well before applying.

**Liniment for Mange, Lice, etc.**

Sulphur .....	4 ounces
Turpentine .....	4 ounces
Oil of tar.....	8 ounces

Mix. The parts should first be washed with soft soap and dried.

**Liniment for Mange, Lice, etc.**

Oil of tar.....	2 ounces
Oil of turpentine.....	2 ounces
Seal oil.....	2 ounces

Apply every second day.

**White Oils or Egg Oils.**

Yolks of 2 eggs, 3 ounces ammonia water, 1 ounce oil of origanum, 4 ounces oil of turpentine, a pint of vinegar; mix.

**Marshall's Oil.**

Linseed oil .....	1 pound
Oil of rape seed.....	1 pound
Olive oil.....	$\frac{1}{2}$ pint
Oil of turpentine.....	$\frac{1}{2}$ pint
Sulphuric acid.....	$\frac{1}{2}$ dram

Mix the sulphuric acid with the oil of turpentine and add the other ingredients.

**Magnetic Oil.**

Oil of hemlock .....	1 ounce
Oil of cedar .....	1 ounce
Oil of origanum .....	1 ounce
Oil of cinnamon .....	1 ounce
Oil of sassafras .....	1 ounce
Oil of wormwood .....	1 ounce
Tincture of capsicum.....	2 ounces
Alcohol .....	1 gallon

Mix well.

**Oil of Spike.**

Oil of turpentine.....	32 ounces
Sulphuric acid.....	2 ounces
Barbadoes tar.....	16 ounces
Whale oil.....	64 ounces
Oil of origanum .....	2 ounces
Oil of juniper wood.....	1 ounce

Gradually and carefully add the sulphuric acid to the turpentine, stirring constantly; when cold add the other ingredients.

**Rattlesnake Oil.**

Gum camphor.....	1 ounce
Oil of cedar .....	$\frac{1}{2}$ ounce
Oil of sassafras .....	$\frac{1}{2}$ ounce
Linseed oil (raw).....	1 quart

Dissolve the camphor with the aid of a gentle heat.

**Petroleum Liniment.**

Kerosene .....	2 pints
Gum camphor.....	1 ounce
Cayenne pepper.....	¼ ounce

Reduce the camphor and pepper to a fine powder and macerate for 3 days, shaking often. Then strain.

**Richball Liniment.**

Oil of sassafras.....	½ dram
Tincture of aconite.....	½ dram
Oil of hemlock .....	2 drams
Oil of cedar .....	2 drams
Oil of organum .....	2 drams
Oil of turpentine .....	2 drams
Tincture of camphor .....	2 drams
Tincture of capsicum .....	2 drams
Tincture of myrrh .....	2 drams
Chloroform .....	2 drams
Alcohol .....	1 pint

Mix.

**Perrin's Liniment.**

Richball liniment (see preceding formula).....	1 pint
Ammonia water.....	½ ounce

Mix.

**Liniment for Rheumatism.**

Crude oil.....	1 pint
Strong vinegar.....	½ pint
Oil of turpentine.....	½ pint

Mix. Shake and rub on mornings and nights.

**Liniment for Mange.**

Coal tar.....	3 ounces
Oil of cade.....	3 ounces
Benzine .....	10 ounces

Mix.

**Liniment for Mange.**

Burnt alum.....	2 ounces
Sulphur .....	3 ounces
Sabadilla powder.....	5 ounces
Sweet oil.....	3 pints

Digest on a water bath for 2 hours.

**Mosquito Oil.**

Cresol .....	2 ounces
Oil of pennyroyal.....	4 ounces
Spirit of camphor.....	6 ounces
Oil of tar.....	6 ounces
Lard oil.....	12 ounces

Mix well.

**Liniment for Lame Shoulder.**

Soap liniment.....	5 ounces
Spirit of camphor.....	5 ounces
Ammonia water.....	1 ounce

Apply several times daily.

**Liniment for Strained Sinews.**

Ammonium chloride.....	1½ drams
Spirit of camphor.....	1½ drams
Dilute acetic acid.....	4 ounces
Water .....	12 ounces

Mix. Apply on a cloth morning and evening.

**Liniment for Soreness, Lameness, Swellings, Rheumatism, etc.**

Alcohol .....	4 ounces
Spirit turpentine.....	4 ounces
Sweet oil.....	4 ounces
Ammonia water.....	1 ounce
Gum camphor.....	1 ounce
Oil of organum.....	½ ounce
Chloroform .....	½ ounce

Mix well and shake before using.

**Liniment for Strains and Swellings.**

Strong vinegar, saturated with common salt.....	1 pint
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Apply warm with a cloth.

**Liniment for Strains and Swellings.**

Zinc sulphate.....	1 ounce
Iron sulphate.....	1 ounce
Potassium nitrate.....	½ ounce
Soft water.....	1 quart

Dissolve and apply cold.

**Liniment for Sprains.**

Liniment of aconite.....	1 ounce
Liniment of belladonna.....	2 ounces
Laudanum .....	1 ounce

Mix, apply a small quantity at a time.

**Stimulating Liniment.**

Soft soap.....	4 ounces
Camphor .....	1 ounce
Alcohol .....	2 pints
Water of ammonia.....	½ pint

Mix and apply twice a day.

**Stimulating Liniment.**

Sweet oil.....	2 ounces
Ammonia water.....	1 ounce
Oil of turpentine.....	½ ounce

Mix and apply morning and night.

**Stimulating Liniment.**

Castor oil.....	2 ounces
Rape oil.....	2 ounces
Oil of turpentine.....	2 ounces

Shake and then add:

Stronger ammonia water..	3 ounces
Water .....	3 ounces

This preparation can be diluted with water in proportion to its own bulk, without losing in appearance.

**Liniment for Sprains, Swellings (Old),****Rheumatism, etc.**

Spirit of ammonia, 2 ounces; camphorated spirit, 2 ounces; oil of turpentine, 1 ounce; laudanum, ½ ounce; oil of organum, 1 dram.

Mix together. Use twice a day.

**Liniment for Thoroughpin.**

Spirit of camphor.....	2 ounces
Ammonia water.....	2 ounces
Sweet oil.....	2 ounces
Oil of turpentine.....	2 ounces
Tincture of arnica.....	4 ounces
Tincture of iodine .....	4 ounces

Mix. Apply twice a day.

**Liniment for Splints.**

Oil of organum.....	1 ounce
Turpentine .....	1 ounce
Alcohol .....	½ ounce

Apply night and morning.

**Tobias' Venetian Liniment.**

Spirit of ammonia.....	5 ounces
Camphor .....	2 ounces
Tincture of capsicum.....	5 ounces
Alcohol .....	34 ounces
Water .....	10 ounces

Mix.

**Compound Liniment of Turpentine.**

Oil of turpentine.....	1 fl. ounce
Stronger ammonia water..	1 fl. ounce
Soap liniment .....	4 fl. ounces

Mix.

**Liniment for Sweeney.**

Alcohol .....	8 ounces
Turpentine .....	8 ounces
Camphor .....	1 ounce
Cantharides .....	1 ounce
Capsicum .....	1 ounce
Oil of spike.....	3 ounces

Macerate for 3 days and filter.

**Liniment for Sore Back.**

Solution of lead acetate.. ½ ounce  
Vinegar ..... 1 ounce  
Olive oil..... 2 ounces

Mix. Shake well and apply with a brush.

**White Liniment.**

Oil of turpentine, 2 ounces; ammonia water, 2 ounces; soap liniment, 3 ounces; spirit of rosemary, 1 ounce. Mix in the above order, and gradually add, with continual agitation, distilled vinegar, 8 ounces.

**White Liniment.**

Yolks of eggs..... 12  
Soft soap..... 6 ounces  
Turpentine ..... 20 ounces  
Stronger ammonia water.. 5 ounces  
Acetic acid..... 4 ounces  
Camphor ..... 6 ounces  
Alcohol ..... 8 ounces  
Oil of amber..... 4 ounces  
Water, enough to make.. 80 ounces

Rub the soap gradually with 10 ounces of water to form a smooth jelly; add the spirit with the camphor dissolved in it, mix the turpentine and the oil of amber; add gradually to the mixture, stirring assiduously the while, and aiding emulsification by the occasional addition of a little water. Then add the ammonia water. Transfer to a large bottle, add gradually the acetic acid, diluted with a pint or more of water; add the eggs, one by one, well shaking all the time, and finally make up to 80 ounces with water. The acetic acid may be omitted, and if this is done a perfect liniment is obtained.

**Genuine White Oil Liniment.**

Ammonium carbonate..... 19 ounces  
Camphor ..... 20 ounces  
Oil of turpentine ..... 21 ounces  
Oil of origanum ..... 20 ounces  
Castile soap..... 19 ounces  
Water, to make..... 20 pints

Dissolve the castile soap in 1 gallon of water and the camphor in the turpentine. Mix. Dissolve the ammonium carbonate in 4 pints of water, add to the mixture and add enough water to make 20 pints. Shake well.

**English Horse Liniment.**

Oil of cajuput..... 13 ounces  
Spirit of ammonia..... 6½ ounces  
Camphor ..... 2 ounces  
Barbadoes tar..... 1 gallon  
Spirit turpentine..... 1¾ gallons  
Raw linseed oil..... 1 gallon

Mix.

**White Oil.**

Yolks of eggs, 4 in number; oil of turpentine, ¼ pint; mix, and add ammonia water, 3 fluid ounces; oil of origanum, ½ ounce; soaper's lye, ¼ pint; water, ¾ pint; agitate well, and strain through a coarse hair sieve.

**Liniment for Sore Throat.**

Aconite liniment..... 1 ounce  
Turpentine liniment..... 3 ounces  
Camphorated soap liniment 2 ounces

Apply freely to the horse's throat.

**Spike Liniment.**

Oil of spike..... 2 ounces  
Water of ammonia..... 2 ounces  
Oil of turpentine ..... 2 ounces  
Sweet oil..... 1½ ounces  
Oil of amber ..... 1½ ounces  
Oil of origanum ..... 1 ounce

Mix.

**Liniment for Sore Throat.**

Tincture of aconite..... 1 ounce  
Oil of turpentine..... 1 ounce  
Camphorated oil..... 8 ounces

Mix, and apply to throat by rubbing.

**Barbwire Liniment.**

Carbolic acid..... ½ fl. ounce  
Oil of turpentine..... 1 fl. ounce  
Pine tar..... 2 fl. ounces  
Fish oil, to make..... 16 fl. ounces

Wash the cut or sore thoroughly with warm water and castile soap, and apply the liniment once daily for a week, then two or three times a week thereafter.

**Baku Liniment.**

Camphor ..... 1 ounce  
Carbolic acid..... 1 fl. ounce  
Oil of origanum ..... 2 fl. ounces  
Oil of tar ..... 2 fl. ounces  
Crude petroleum..... 2 fl. ounces  
Oil of turpentine..... 12 fl. ounces  
Liquid petrolatum..... 12 fl. ounces  
Benzine ..... 16 fl. ounces

Mix.

**Veterinary Ointment.**

Chalk ..... 12½ pounds  
Soft soap..... 5 pounds  
Water ..... 5 quarts  
Heat to the boiling point and add:  
Chlorinated lime..... 10 ounces  
Water ..... 2½ pints

Boil until pasty and add:

Creolin ..... 5 ounces  
Friar's balsam..... 10 ounces

The ointment may also be used, when mixed with water, for laundry purposes and as a garden insecticide.

**Green Ointment.**

Resin ointment..... 5 ounces  
Verdigris..... ¼ ounce  
Oil of turpentine..... 2 ounces  
Mutton tallow..... 2 pounds  
Oil of origanum..... 1/3 ounce  
Tincture of iodine..... 1/3 ounce

This is a good remedy for scratches, hoof-evils, cuts, etc.

Melt the tallow and ointment together, gradually add the other ingredients and stir until cold.

**For Cracked Hoofs.**

Solution of lead acetate... 1 ounce  
Olive oil..... 20 ounces

Mix, shake, use as a lotion.

**Ointment for Cracked Hoofs.**

Solution of subacetate of lead ..... 1 ounce  
Glycerin ..... 1 ounce  
Water, enough to make.. 20 ounces

Use as a lotion.

**Lotion for Cracked Heels.**

Solution of arsenous acid. 1 dram  
Water ..... 16 drams

Apply twice a day.

**Ointment for Cracked Heels.**

Lard ..... 1 ounce  
Honey ..... 2 ounces  
Venice turpentine..... 1 ounce  
Train oil..... 1 ounce  
Verdigris ..... ¼ ounce  
Copper sulphate..... ¼ ounce  
Alum ..... ¼ ounce

Mix them.



**Ointment for Cracked Heels and Grease.**

Venice turpentine, 4 ounces; wax, 1 ounce; lard, 4 ounces; melt together, and add sugar of lead, 1 ounce (or alum 2 ounces) in fine powder.

**Ointment for Cracked Heels and Grease.**

Common turpentine, 1 pound; melt and add powdered alum,  $1\frac{1}{2}$  pounds; bole, 2 pounds; stir till cold, spread on brown paper, and tie over with cloth.

**Ointment for Cracked Heels and Grease.**

Lard,  $\frac{1}{2}$  pound; honey,  $\frac{1}{2}$  pound; common turpentine,  $\frac{1}{2}$  pound; melt, and add powdered alum, 1 pound; white vitriol, 2 ounces; stir till cold.

**Ointment for Cracked Heels and Grease.**

Citrine ointment, 3 ounces; lard, 2 ounces; turpentine, 2 drams; saturated solution of copper nitrate, 2 drams.

Mix well and apply mornings and nights.

**Ointment for Horses' Knees.**

Mercurial ointment..... $1\frac{1}{2}$  ounces  
Honey ..... 1 ounce  
Camphor, powdered..... 2 drams  
Burned cork powder....  $\frac{3}{4}$  ounce

Mix the powders and add the honey, mix well, and finally add the ointment.

**Ointment Marshmallow.**

Rape oil, 1 pound, yellow wax, 6 ounces, palm oil,  $\frac{1}{2}$  pound, common turpentine, 1 ounce.

Melt together and stir till cool.

**Suppurating Ointment for Wounds.**

Basilicon ointment..... 1 ounce  
Cantharides, in fine powder .....  $\frac{1}{4}$  ounce  
Spirit turpentine.....  $\frac{1}{4}$  ounce

Mix thoroughly. Used to make a wound suppurate or run.

**Hoof Ointment.**

Oil of origanum..... 1 ounce  
Camphor, powdered..... 1 ounce  
Lard ..... 16 ounces

Mix well, and apply twice a week.

**Hoof Ointment.**

A good preparation, and one that is said will give the horse's hoof a rapid and healthy growth, is to take of oil of tar, 1 pint; beeswax,  $1\frac{1}{2}$  pounds; whale oil, 4 pints. Mix and melt together over a slow fire, and apply to all parts of the hoof once or twice a week.

**Hoof Liquid.**

Linseed oil..... 8 ounces  
Spirit of turpentine..... 4 ounces  
Oil of tar ..... 6 ounces  
Oil of origanum .....  $1\frac{1}{2}$  ounces

Mix. Apply all around the hoof (top) down one inch every day. If for split hoof, apply every day.

**Hoof Ointment.**

Tar ..... 8 ounces  
Tallow ..... 8 ounces

Melt together and use every morning.

**Ointment for Scurvy Heels.**

Lard ..... 1 ounce  
Goulard's extract.....  $\frac{1}{2}$  dram

Mix. Rub the heels first with soap and water.

**Ointment for Scurvy or Cracked Heels.**

Diachylon ointment..... 4 ounces  
Olive oil..... 4 ounces  
Sugar of lead, in fine powder ..... 3 drams

Melt the ointment and oil together, then stir in the lead. Stir till cool. Wash the heels and apply the ointment.

**Ointment for Scurvy or Cracked Heels.**

White ointment..... 4 ounces  
Camphor, powdered..... 6 drams  
Laudanum ..... 2 drams  
Goulard's extract..... 2 drams

Melt the ointment and add the other ingredients. Stir till cold.

**Ointment for Cracked Heels.**

Lard ..... 4 pounds  
Rosin ..... 1 pound  
Calamine ..... 1 pound

Melt lard and rosin together, add the calamine when nearly cool and stir till hard.

**Softening and Cooling Ointment for Cracks and Ulcers on the Heel.**

Spermoceti ointment, 4 ounces; olive oil, 1 ounce; sugar of lead, 2 drams; oxide of zinc, 1 ounce. Mix well together.

**Ointment for Sore Backs and Saddle Galls.**

Camphor, 2 drams; oil of rosemary, 1 dram; elder ointment or lard, 3 ounces. Mix together, apply to sore and cover with linen.

**Ointment for Sore Backs.**

Marshmallow ointment, 4 ounces; extract of lead, 1 ounce. Mix well.

**Ointment for Thrush and Canker.**

Blue vitriol, 2 ounces; white vitriol, 1 ounce; rubbed down and mixed with lard, 2 pounds; tar, 1 pound; a pledget of tow covered with it to be introduced into the cleft of the frog every night, and renewed in the morning.

**Thrush Paste.**

Alum, blue vitriol, white vitriol, of each 1 ounce; rub them into a fine powder; melt 2 pounds of tar with 1 pound of lard, and when getting cool stir in the powder.

**White Salve.**

Pure carbolic acid..... 1 dram  
Oil of bergamot.....  $\frac{1}{2}$  dram  
Oil of citronella.....  $\frac{1}{2}$  dram  
White precipitate..... 1 dram  
Prepared lard..... $2\frac{1}{2}$  ounces  
Yellow wax..... 2 drams

Melt the lard and wax, add the other ingredients and stir till cool.

**Blistering Liniment.**

Linseed oil.....  $\frac{1}{2}$  pint  
Spirit turpentine..... 2 ounces  
Cantharides, in powder... 1 ounce  
Euphorbium in powder...  $\frac{1}{2}$  ounce

Mix and shake them in a bottle for use.

**Blistering Liniment.**

Spanish flies, 1 ounce; euphorbium,  $\frac{1}{2}$  ounce; oil of turpentine, 4 ounces; digest for two or three days and pour off the liquid; digest the Spanish flies, etc., in 4 ounces of spirit of wine and 2 ounces of ammonia water for three or four days, shaking frequently, strain off this liquid, and mix it with the former.

**Blistering Liniment.**

Pulverized cantharides....	1 ounce
British oil.....	1 ounce
Oil of origanum.....	1 ounce
Oil of amber (crude)....	1 ounce
Spirit turpentine.....	1 ounce
Olive oil.....	1 ounce

Mix.

Corrosive sublimate.....	1 dram
Alcohol .....	½ pint

Mix and dissolve, then add the other mixture.

Apply to parts affected once a day until it blisters; then dress blister with carbolized ointment. Repeat treatment if necessary.

**Blistering Liniment.**

Spanish fly, powdered....	1 ounce
Alcohol .....	6 ounces
Ammonia water.....	2 ounces

Mix, macerate for a week, shaking often and strain.

**Clater's Strong Liquid Blister.**

Spirit turpentine, colored with alkanet, 1 gallon; powdered Spanish flies, 1 pound; macerate for a month, shaking daily, then pour off the clear fluid for use.

**Blistering Liniment for Immediate Use.**

Spanish flies, in powder..	1 ounce
Oil of turpentine.....	6 ounces

Mix and rub on the belly for inflammation of the bowels.

**Blistering Tincture.**

Spanish flies.....	1 ounce
Diluted alcohol.....	8 ounces

Mix, macerate a week and filter. Rub in and repeat the next day if necessary.

**Horse Blister.**

Oil of turpentine.....	8 ounces
Powdered cantharides.....	1 ounce
Ammonia spirit.....	4 ounces
Olive oil.....	2 ounces
Oil of sassafras.....	1 ounce

Mix. The surface should be washed off with hot water and dried, and then the blistering liquid applied.

**Blistering Liquid.**

Powdered camphor, 20 parts; chloral, 30 parts; melt at 140° F., and add 10 parts powdered cantharides, agitate for one hour, with heat, but do not let the temperature go above 158° F., filter. This vesicant liquor may be used with compresses, or painted on with a brush.

**Blistering Ointment.**

Tar .....	4 ounces
Sulphuric acid.....	2 drams
Oil of origanum.....	½ ounce
Lard .....	2 ounces
Spanish flies.....	2 ounces

Mix the tar and sulphuric acid, when cold, add the other ingredients and mix thoroughly. An excellent blister for a spavin.

**Blistering Ointment.**

Lard .....	½ ounce
Beeswax .....	3 drams
Corrosive sublimate, in powder .....	½ dram
Spanish flies.....	2 drams

Mix well, spread on leather and apply to the spavin.

**Blistering Ointment.**

Powdered cantharides....	1 ounce
Powdered rosin.....	1 ounce
Lard .....	4 ounces

Melt the lard and rosin together, add the cantharides, and stir until cold.

**Blistering Ointment.**

Yellow wax.....	3 ounces
Lard .....	4 ounces
Corrosive sublimate.....	4 drams
Powdered cantharides....	2 ounces
Oil of turpentine.....	4 drams
Barbadoes tar.....	4 drams

Mix the wax and lard and stir in the other ingredients, first reducing the corrosive sublimate to impalpable powder.

**Horse Blister.**

Powdered cantharides....	2 drams
Camphor .....	5 grains
Oil of lavender.....	10 drops
Lard .....	1 ounce

Mix thoroughly. Cut the hair from the part and rub in well with the palm of the hand and against the direction of the hair for four or five minutes. The horse should be so tied that he cannot reach the blistered surface until the blister is well raised, and the application should be washed off with soapsuds and smeared daily with lard. The blistering should not be repeated until the effects of the first have passed off. Several blisterings will doubtless kill the roots of the hair, but one application carefully attended to will not so result.

**Horse Blister.**

Yellow wax.....	3 ounces
Lard .....	4 ounces
Red iodide of mercury....	4 drams
Powdered cantharides....	2 ounces
Oil of turpentine.....	4 drams
Barbadoes tar.....	4 drams

Melt the wax and lard and stir in the other ingredients, first reducing the red iodide of mercury to an impalpable powder.

**Euphorbium Horse Blister.**

Powdered cantharides....	12 ounces
Powdered euphorbium....	8 ounces
Powdered corrosive sublimate .....	1 ounce
Lard .....	48 ounces

Mix well together.

**Liquid Blister.**

Cantharides, powdered....	4 ounces
Euphorbium, powdered....	½ ounce
Capsicum, powdered.....	½ ounce
Turpentine .....	2½ ounces
Methyl alcohol.....	17½ ounces

Mix. Digest 14 days, then strain.

**Blister for Ring Bone.**

Red iodide of mercury....	1 dram
Lard, enough to make....	1 ounce

Use as an ointment.

**Leeming's Essence.**

Cantharides, powdered....	4 ounces
Euphorbium .....	1 ounce
Mercury bichloride.....	1 ounce
Methylated spirit.....	24 ounces
Oil of thyme.....	6 drams

Mix together and digest for a week, shaking often; then filter and add enough alcohol to make 24 ounces.

**Caustic Oil.**

Croton oil.....	5 drams
Cottonseed oil.....	6 ounces
Camphor oil.....	½ ounce
Oil of turpentine.....	½ ounce
Oil of thyme.....	1 dram
Petrolatum.....	1 ounce
Sulphuric acid.....	1 dram

Mix.

**Strong Blister.**

Cantharides in powder....	1½ ounces
Euphorbium in powder....	1½ ounces
Corrosive sublimate in powder .....	½ ounce
Mercurial ointment.....	4 ounces
Linseed oil.....	1 ounce
Sulphuric acid.....	2 ounces
Nitric acid.....	2 ounces
Oil of turpentine.....	8 ounces
Petrolatum.....	4 ounces

Add the sulphuric acid slowly to the linseed oil, stirring with a glass rod, in a large, open glass or porcelain vessel, then add the nitric acid, and the oil of turpentine and petrolatum. Let stand for 2 days, decant the liquid from the sediment, and mix it with the ointment to which the solid ingredients have previously been added. Mix well.

**Blister for General Use.**

Red iodide mercury.....	1 dram
Oil of cajuput.....	1 dram
Petrolatum .....	8 drams

Mix well.

**Liquid Blister.**

Cantharides .....	1 ounce
Oil of turpentine.....	8 ounces
Ammonia water.....	4 ounces
Olive oil.....	2 ounces
Oil of sassafras.....	1 ounce

Macerate for several days and strain.

**Incipient Ring Bone.**

Acetic acid.....	1 ounce
Tincture of arnica.....	2 drams
Solution of subacetate of lead .....	1 dram
Alcohol .....	1 or 2 ounces
Water, enough to make....	16 ounces

Make a lotion, and apply morning and night.

**Ring Bone.**

Gum euphorbium.....	1 ounce
Mercurial ointment 33% .....	2 ounces
Powdered corrosive sublimate .....	½ ounce
Powdered cantharides.....	½ ounce
Oil of turpentine.....	2 ounces
Tincture of iodine.....	1 ounce
Mutton tallow.....	2 pounds
Lard .....	2 pounds

Melt all together over a water bath; stir until cool. Apply every other day as required.

**Ring Bone.**

Powdered corrosive sublimate .....	1 ounce
Oil of turpentine.....	1 pint

Mix and dissolve.

Apply to parts affected once a day as required.

**Ring Bone.**

Tincture of cantharides...	1 ounce
Tincture of iodine.....	8 ounces
Tincture of myrrh.....	3 ounces
Oil of turpentine.....	4 ounces
Alcohol .....	5 ounces

Mix. Apply twice a day.

**Ring Bone.**

Pulverized cantharides, oils of spike, origanum, amber, cedar, Barbadoes tar and British oil, of each 2 ounces; oil of wormwood, 1 ounce; spirit turpentine, 4 ounces; common potash ½ ounce; nitric acid, 6 ounces; oil of vitriol, 4 ounces, and lard, 3 pounds. Melt the lards slowly and add the acids; stir well and add the others, stirring till cold. Clip off the hair, and apply by rubbing and heating in; in about 3 days, or when it has done running, wash off with suds and apply again. In old cases it may take 3 or 4 weeks, but in recent cases 2 or 3 applications will cure.

**Ring Bone.**

Take ½ pint oil of turpentine, ½ ounce bluestone, ½ ounce of red precipitate. Shake well and use every morning, and keep the hoof well greased. This will not only take off the hair, but will cause a severe blister. After healing, if there still be signs of lameness, repeat the remedy.

**Ring Bone.**

Oil of turpentine.....	8 ounces
Alcohol .....	8 ounces
Tincture of iodine.....	8 ounces
Camphor .....	4 ounces
Crude petroleum.....	1 ounce
Oil of rosemary.....	4 drams

Dissolve the camphor in the alcohol and tincture, add the other ingredients. Shake before applying.

**Ring Bone and Spavin.**

Venice turpentine and Spanish flies, of each 2 ounces; euphorbium and ammonia water, of each 1 ounce; red precipitate, ½ ounce; corrosive sublimate, ¼ ounce; lard, 1½ pounds. Pulverize all and put into the lard; simmer slowly over coals, not scorching or burning, and pour off, free of sediment. For ringbones, cut off the hair and rub the ointment well into the lumps once in 48 hours. For spavins, once in 24 hours for 3 mornings. Wash well previous to each application with suds, rubbing over the place with a smooth stick, to squeeze out the thick, yellow matter.

**Ring Bone and Spavin.**

Oil of turpentine.....	10 ounces
Alcohol .....	16 ounces
Tincture of iodine.....	2 ounces
Camphor .....	2 ounces
Corrosive sublimate.....	1 dram
Oil of sassafras.....	2 ounces
Petroleum .....	1 ounce

Dissolve the camphor in the alcohol and mate in the alcohol, then add the other ingredients. Use as directed in the preceding formula.

**Spavin.**

Take ½ ounce oil of amber, 1 ounce oil of spike, 2 ounces oil of turpentine, ½ ounce nitric acid. The acid must be put in last. Apply this mixture thoroughly, and—though it will not remove the bunch—the lameness will generally disappear. If the horse is over 4 years old, fit a bar of lead just above it, wiring the ends together so that it will constantly wear upon the enlargement, and the two together will cure nine cases out of every ten in six weeks.

**Spavin.**

Corrosive sublimate.....	10 grains
Tincture of arnica.....	2 ounces
Oil of peppermint.....	2 ounces
Tincture of iodine.....	1 pint

Mix and dissolve. Apply with brush or



**Spavin.**

Take one ounce of origanum oil, 1 ounce of British oil, 1 ounce of oil of spike, 1 ounce oil of wormwood, 1 ounce gum myrrh, 1 gill of alcohol. Put the oils together; put the gum in the alcohol, and let it stand for 24 hours, and then add to the oils; shake well before using; apply to the parts affected and rub it in well with the hand, or heat it in with a hot iron. If it is applied for a sprain, use it morning and evening. Wash clean once in 3 days.

**Spavin.**

Cantharides, powdered....	4 ounces
Oil of origanum .....	4 ounces
Oil of amber .....	4 ounces
Oil of turpentine .....	4 ounces
Oil of cottonseed.....	4 ounces
Sulphuric acid.....	1 ounce

Mix the first five ingredients well, then slowly stir in the acid. When cool, bottle.

**For Bone Spavin.**

Tincture of iodine.....	1 ounce
Euphorbium .....	1 ounce
Corrosive sublimate.....	1 ounce
Red precipitate.....	1 ounce
Spanish flies.....	1 ounce
Camphor gum.....	1 ounce
Oil of origanum.....	1 ounce
Oil of amber.....	1 ounce
Spirit of ammonia.....	1 ounce
Oil of turpentine.....	1 ounce

Mix well together. Shake before applying.

**Spavin.**

Camphor .....	2½ ounces
Oil of turpentine.....	30 ounces
Oil of rosemary.....	1 ounce
Iodine .....	3 ounces
Alcohol .....	5 pints
Water .....	2 pints

Dissolve the camphor in the oils and the iodine in the alcohol, mix, and add the water.

**Spavin.**

Croton oil.....	2 ounces
Cottonseed oil.....	8 ounces
Sulphuric acid.....	1 dram

Mix the oils and slowly stir in the acid. Apply with a brush, after cutting the hair, once a day, washing before each application.

**Ointment for Bone Spavin.**

Iodine .....	2 drams
Potassium iodide.....	1 dram
Sulphuric acid.....	2 drams
Palm oil.....	4 drams

To be applied once a day.

**Splint and Spavin.**

Oil of origanum.....	6 ounces
Gum camphor, powdered..	2 ounces
Mercurial ointment.....	2 ounces
Iodine ointment.....	1 ounce

Melt by putting all into a wide-mouthed bottle, and setting it in a bottle of hot water. Apply it to bone spavins or splints twice daily for four or five days.

**Spavin.**

Yellow wax.....	1 dram
Rosin .....	3 drams
Cantharides .....	1½ drams
Charcoal .....	2 drams
Red iodide mercury.....	2 drams
Linseed oil.....	4 ounces
Lard oil.....	4 ounces

Mix by aid of heat. Apply with brush.

**Spavin and Ring Bone.**

Alum .....	2 drams
Verdigris .....	1 ounce
Wax, white.....	2 ounces
Yellow wax.....	2 ounces
Lard .....	4 ounces

Melt all together, stir till cold. Apply twice a day.

**Spavin.**

Cantharides .....	2 drams
Euphorbium .....	2 drams
Mercuric chloride.....	15 grains
Red oxide mercury.....	30 grains
Mercurial ointment.....	5 drams
Tincture of iodine.....	2 drams
Lard .....	3 pounds

Melt all together, stir till cold. Apply with brush.

**Ointment for Spavins, Splints and Ring Bones.**

Beeswax .....	4 ounces
Hog's lard.....	2 ounces
Train or tanner's oil.....	½ pint
Gum turpentine, or Cana-	
da balsam.....	6 ounces

Simmer over a slow fire till dissolved, then put them in a jar and add:

Spirit turpentine.....	4 ounces
Corrosive sublimate, pow-	
dered .....	½ ounce
Euphorbium,	
Cantharides, in powder, of	
each .....	2 ounces

Stir, and when nearly cold, add sulphuric acid, ½ ounce, then stir the whole until it hardens.

**Foot Spavin.**

Green soap.....	4 ounces
Ammonium water.....	1 ounce
Crude petroleum.....	5 drams
Tincture of cantharides...	5 drams

Mix well. Rub on every day.

**Cement for Horses' Hoofs.**

To fill cracks and fissures in the hoofs of horses, a cement is required which resists the action of the water and possesses great elasticity combined with solidity. The following compound answers all demands:

Gum ammoniac.....	10 parts
Purified gutta-percha..	20 to 25 parts

The gutta-percha is heated from 195 to 212° F., and the powdered gum kneaded into it until a homogeneous mass is formed. The place to be cemented should be thoroughly cleansed. The cement is heated until it becomes soft, and the cracks in the hoof filled with it by means of a heated knife. It becomes hard when cooled off to the ordinary temperature, and acquires in a short time such a degree of solidity that nails may be driven into it.

**Hoof Dressing.**

A good preparation, and one that will give the horse's hoof a rapid and healthy growth, is to take of oil of tar, 1 pint; beeswax, 1½ pounds; whale oil, 4 pints. The above ingredients should be mixed and melted together over a slow fire, and applied to all parts of the hoof at least once or twice a week.

**Hoof Liniment.**

Neatsfoot oil.....	4 ounces
Oil of turpentine.....	2 ounces
Oil of tar.....	3 ounces
Oil of origanum.....	1½ ounces

Mix together and apply once a day.

**Hoof Liquid.**

Linseed oil.....	½ pint
Spirit turpentine.....	4 ounces
Oil of tar.....	6 ounces
Oil of origanum.....	1½ ounces

Apply all around the hoof (top) down one inch every day. If for split hoof, apply every day.

**Hoof Liquid.**

Oil of tar and fish oil, of each, equal parts.  
Apply as directed in the above.

**Hoof Ointment.**

Camphor .....	1 ounce
Balsam of fir.....	1 ounce
Turpentine .....	1 ounce
Oil of cajuput.....	4 drams
Tincture of iodine.....	5 drams
Lard .....	6 ounces

Melt the camphor, oils and lard together, stir, when nearly cold add the tincture and continue to stir till cold.

**Hoof Ointment.**

Take ½ pound of lard and 4 ounces of rosin. Heat them over a slow fire until melted; take the pot off the fire, add 1 ounce of pulverized verdigris; stir well to prevent the mixture from running over. When partially cool add 2 ounces of turpentine. Apply it from the hair down 1 inch. Work the horse all the time.

**Hoof Ointment.**

Suet .....	10 drams
Yellow wax.....	2 drams
Black pitch.....	2 drams
Tar .....	2 drams
Lampblack .....	1 dram

Melt together on a water bath and apply once a day.

**Hoof Ointment.**

Camphor .....	1 ounce
Oil of origanum.....	1 ounce
Pure lard.....	1 pound

Mix and apply every week or two.

**Hoof Ointment.**

Equal parts of wax, olive oil, lard, veal suet, turpentine and honey; melt the wax, suet and lard with the oil by a gentle heat; remove from the fire and add the honey and turpentine, stirring till cold. When intended to embellish the hoof as well as soften it, it may be colored with lampblack or ivory black.

**Cracked Hoofs.**

Gum turpentine.....	1 ounce
Gum ammoniac.....	3 ounces
Gutta-percha .....	6 ounces

Melt together over a water bath. Lampblack may be added if a black color is desired. Soften the cement before using.

**Hoof Ointment.**

Tallow, 4 pounds; beeswax, 4 ounces; tar, ½ pound; melt slowly, remove from the fire, and when they begin to cool, stir together. portion of pitch may be added when intended to fill fissures, etc.

**Grease for Hoofs.**

Horse grease.....	5 ounces
Tallow .....	2 ounces
Petroleum .....	3 ounces
Acetic acid.....	2 ounces
Lampblack, sufficient for coloring.	
Nitrobenzol .....	1 dram

Melt the fats together and stir in the lampblack and nitrobenzol.

**Split or Broken Hoof.**

Let the blacksmith bore two holes on each side of the crack or split; pass long nails through the holes and clinch tight. After anointing with the hoof-bound liquid it will soon grow together.

**Lotion for Cracked Hoofs.**

Zinc sulphate.....	1 ounce
Lead acetate.....	1 ounce
Water .....	1 quart

Wash every day, warming the lotion.

**Hoof Bound Wash.**

Spirit turpentine.....	4 ounces
Tar .....	4 ounces
Whale oil.....	8 ounces

Mix, and apply to hoofs often.

**To Toughen Hoofs.**

Wash them frequently in strong brine, and turn brine upon the bottoms, and soak a few minutes each time.

**Composition for Sand Cracks.**

Beeswax, 4 ounces; yellow rosin, 2 ounces; common turpentine, 1 ounce; tallow, ½ ounce; melt together, fill the cracks with the composition, and turn the horse out to grass.

**Grease Remedy.**

Copper sulphate.....	2 drams
Ferrous sulphate.....	2 drams
Alum .....	2 drams
Water .....	16 ounces

Dissolve. Apply after washing and wrap with a woolen bandage.

**Grease Remedy.**

Salicylic acid.....	80 grains
Carbolic acid.....	40 grains
Sweet oil.....	8 ounces

Dissolve. Wash the parts with soap and water, dry and apply the oil.

**Acetum Vulnerarium.**

Powdered alum.....	2 drams
Water .....	4 ounces
Pyroligneous vinegar.....	6 ounces
Alcohol .....	1 ounce

Mix and dissolve. A good general liniment for slight sores and cuts.

**Eye Water, for Horses.**

Lead acetate and zinc sulphate, of each ½ dram; dissolve them separately in ½ pint of boiled water; mix and filter.

**Eye Water, for Horses.**

Solution of acetate of ammonia, 3 ounces; rose water, 6 ounces.  
Mix and filter.

**Eye Water, for Horses.**

Tincture of opium, 2 drams; water, 8 ounces; extract of lead, 1 dram.  
Mix and shake before using.

**Eye Water, for Horses.**

Brandy, 1 ounce; vinegar, 1 ounce; tincture of opium, 2 drams; rose water, 8 ounces.  
Mix.

**For Watery, Bloodshot Eyes.**

Burnt alum, 1 ounce; calcined white vitriol, 1 ounce; boiling water, 3 pints.  
Mix and filter.

**For Inflamed Eyes.**

Zinc sulphate..... 16 grains  
 Distilled water..... 16 ounces  
 Dissolve and use as a wash freely.

**Eye Water.**

Zinc sulphate..... 20 grains  
 Deodorized tincture opium..... 1½ drams  
 Infusion of chamomile flowers ..... 16 ounces  
 Mix and dissolve. Use as a wash.

**Eye Water.**

Silver nitrate..... 4 grains  
 Distilled water..... 5 ounces  
 Mix and dissolve.  
 Drop 2 or 3 drops into the eye once daily after washing.

**For Opacity of the Cornea.**

Calomel,  
 Sugar of milk, each..... 2 drams  
 Mix well. Blow a pinch of this powder into the eye after washing.

**Powder for Dull Eyes.**

Zinc oxide..... 5 grains  
 Sugar of milk..... 50 grains  
 Mix well and use as directed in the preceding formula.

**Epizootic.**

Spirit of nitrous ether..... 1 ounce  
 Tincture of aconite root... 1 ounce  
 Tincture of belladonna root 1 ounce  
 Tincture of opium ..... 1 ounce  
 Mix. Give 1 teaspoonful four times the first day, then only three times per day.

**Epizootic or Pinkeye.**

Sodium sulphate..... 10 ounces  
 Licorice root..... 7 ounces  
 Ammonium chloride..... 3 ounces  
 Potassium nitrate..... 3 ounces  
 Mix well. A tablespoonful in warm, soft food 3 times a day.

**Epizootic (Influenza).**

Powdered camphor..... 1½ drams  
 Potassium nitrate..... 5 drams  
 Aloes ..... 1 ounce  
 Linseed meal..... 1 ounce  
 Water, enough to make... 2 boluses  
 Give one every 2 hours.

**Epizootic (Influenza) with Diarrhoea.**

Tannin ..... 80 grains  
 Alum ..... 4 drams  
 Licorice, powdered..... 1 ounce  
 Honey, enough to make... 2 boluses  
 Give one every 5 hours.

**Epizootic (External Application).**

Oil of turpentine..... 1 ounce  
 Spirit of camphor..... 6 ounces  
 Mix. Sprinkle upon the abdomen, rub with soft brush and cover with a warm blanket.

**For Chronic Bronchial Catarrh.**

Sodium sulphate..... 2 ounces  
 Sodium chloride ..... 2 ounces  
 Sodium bicarbonate ..... 1 ounce  
 Licorice root..... 1 ounce  
 Mix well. A tablespoonful with each meal.

**Nasal Catarrh.**

Reduced iron..... 3 ounces  
 Powdered nux vomica.... 1 ounce  
 Mix and divide into 16 powders. Give one powder morning and night with food.

**Hypodermic Injection for Colic.**

Eserine sulphate..... 3 grains  
 Distilled water..... 3 drams  
 Dissolve. Inject one-half and repeat in six hours.

**Hypodermic Injection for Colic.**

Eserine sulphate..... 3 grains  
 Pilocarpine hydrochloride. 6 grains  
 Distilled water..... 4 drams  
 Dissolve. Inject one-half and repeat in six hours.

**Fuller's Leg Wash.**

Ammonium hydrochloride. 4 drams  
 Tincture of asafetida..... 4 drams  
 Tincture of aconite root... 2 ounces  
 Acetic acid..... 8 ounces  
 Mix. From 2 to 4 teaspoonfuls of the mixture are used to 1 pint of water, as an embrocation.

**Remedy for Bots.**

Rosin ..... 2 ounces  
 Saltpetre ..... 1 ounce  
 Gentian ..... 2 ounces  
 Copperas ..... 2 ounces  
 Fenugreek ..... 4 ounces  
 Reduce each separately to a fine powder and mix well. A tablespoonful at night.

**Farcy.**

Saltpetre ..... 2 ounces  
 Elecampane ..... 1 ounce  
 Sodium sulphite..... 4 drams  
 Black sulphide antimony.. 1 ounce  
 Mix. A tablespoonful twice a day.

**Founder or Laminitis.**

Tincture of capsicum .. 1 dram  
 Tincture of aconite ..... 15 drops  
 Cider vinegar..... 6 ounces  
 Water ..... 1 pint  
 Mix. Give as a drench and cover with a blanket. After two hours give a pint of raw linseed oil.

**Founder or Laminitis.**

Tincture of aconite..... 10 drops  
 Tartar emetic..... 15 grains  
 Saltpetre ..... 1 dram  
 Ginger ..... 2 drams  
 Linseed meal..... 1 ounce  
 Make one bolus. Give at once and repeat in 6 hours.

**Founder or Laminitis.**

Camphor ..... 1 dram  
 Potassium nitrate..... 1 ounce  
 Juniper berries..... 2 ounces  
 Rye flour..... 2 ounces  
 Sodium sulphate..... 4 ounces  
 Powder and make into a paste with water. Give one-half and repeat in 5 hours.

**Founder or Laminitis.**

Aloes ..... ½ ounce  
 Sodium sulphate..... 4 ounces  
 Rye flour..... 2 ounces  
 Make into a paste, give at once, and repeat in 3 hours.

**Founder or Laminitis (External Remedy).**

Ammonia liniment..... 4 ounces  
 Oil of turpentine..... 1 ounce  
 Mix and apply twice a day.

**Mange Lotion.**

Acid nitrate of mercury, 2 drams; distilled water, 16 ounces.  
 Dissolve and apply with soft sponge.



**Mange Lotion.**

Boil 4 ounces of white hellebore in 3 pints of water to 2 pints, add corrosive sublimate 2 drams, previously dissolved in 3 drams of muriatic acid.

Apply on a linen cloth.

**Mange Lotion.**

Boil 2 ounces of tobacco in a quart of water, strain and add common salt 3 ounces, soap 2 ounces.

Mix well and apply once a day, washing the parts before applying.

**Mange Lotion.**

White hellebore, 2 ounces; tobacco, 2 ounces; water, 3 pints. Boil, strain, and add when cold a pint of fresh lime water.

Apply to sores by means of a soft linen cloth.

**Knee Ointment.**

Mercurial ointment..... 2 ounces  
Honey ..... 1 ounce  
Camphor ..... 2 drams

Mix well and apply covering with a bandage.

**Nasal Gleet.**

Aloes ..... 6 drams  
Nux vomica..... 20 grains  
Linseed meal..... 4 drams

Make one bolus. Give one every night.

**Pleurisy.**

Tincture of aconite..... 12 drops  
Tartar emetic..... 30 grains  
Powdered ginger..... 30 grains  
Linseed meal..... 4 drams

Make one bolus. Give at a dose.

**Saddle and Harness Galls.**

Sulphuric acid..... 1 dram  
Alum, dried..... 2 drams  
Water, enough to make... 8 ounces

Use as a lotion.

**Saddle Galls.**

White lead and linseed oil, mixed as for paint, is unrivalled for healing saddle, harness or collar galls and bruises. Apply with a brush. It soon forms an air-tight coating and soothes the pain, promptly assisting nature.

**Compound Zinc Sulphate Powder, B.P.C.**

Zinc sulphate, in very fine powder ..... 2 ounces  
Eucalyptol, by weight.... 7 grains  
Menthol ..... 7 grains  
Phenol ..... 7 grains  
Salicylic acid, in very fine powder ..... 35 grains  
Thymol ..... 7 grains  
Boric acid, in very fine powder ..... 13 ounces  
374½ grains

Mix the salicylic acid and zinc sulphate; then add the eucalyptol, menthol, phenol and thymol, triturate until intimately mixed, and gradually add the boric acid in small portions so as to obtain a uniform impalpable powder.

**Saddle and Harness Galls.**

Salicylic acid..... 1 ounce  
Zinc oxide..... 2 ounces  
Water ..... 1 ounce  
Mutton tallow..... 5 ounces  
Lard ..... 8 ounces

Melt all together and stir till cool. Apply once a day.

**Saddle Galls.**

Salicylic acid..... ½ ounce  
Mutton tallow..... 2 ounces  
Lard ..... 4 ounces  
Lead plaster..... 4 ounces

Melt all together and stir till cool.

**Saddle Galls.**

Tannic acid..... 1 ounce  
Powdered camphor..... 2 ounces  
Zinc oxide..... 3 ounces

Mix well and sift. Sprinkle on the raw surface, after washing with an antiseptic solution.

**Saddle Galls.**

Silver nitrate..... 10 grains  
Distilled water..... 1 ounce

Dissolve and apply with brush.

**Saddle Galls.**

Carbolic acid ..... 1 dram  
Glycerin ..... 15 drams

Mix. Apply with brush.

**Saddle Galls.**

Compound tincture of benzoin ..... 2 ounces

Apply with a brush. This is also a good application for small cuts and wounds.

**Saddle Galls.**

Red oxide of lead..... 2 ounces  
Lead acetate..... 1 ounce  
Beef suet..... 1½ ounces  
Linseed oil..... 8 ounces

Heat and stir constantly until it assumes a brown color. Apply once daily.

**Scratches.**

Cut off the hair close, and wash the legs in strong soapsuds or wash with warm vinegar saturated with salt, and afterwards dress over with a small quantity of lard.

**Scratches.**

Red oxide of mercury.... 50 grains  
Saturated solution of camphor in turpentine (allow to stand over night) 50 minims  
Amber petrolatum..... 500 grains

Make a salve and apply once a day.

**Astringent for Scours or Diarrhoea.**

Alum, powdered..... 2 ounces  
Catechu, powdered..... 1 ounce  
White oak bark, powdered 2 ounces

To be given in gruel, and repeated if necessary.

**Cure for Staggers.**

Give a mass twice a week, composed of bran, 1 gallon; sulphur, 1 tablespoonful; salt-petre, 1 spoonful; boiling sassafras tea, 1 quart; asafetida, 1½ ounces. Keep the horse from cold water for half a day afterwards.

**Styptic Stone.**

For saddle galls, kicks, sprains, bruises, ulcers, and as a collyrium. Iron sulphate, 8 ounces, sal ammoniac, zinc sulphate, and copper oxide, of each 1 ounce; mix, and melt together with gentle heat. About the size of a hickory nut of this compound to be dissolved in a quart of warm water and applied with compresses renewed every 3 or 4 hours.

**Linseed Mash (Hind's Cooling Decoction).**

Linseed, 2 quarts; coarse sugar, 2 ounces; boiling water, 6 quarts. Simmer for three or four hours.

**Typhoid in Horses.**

Quinine sulphate..... 1 dram  
 Salicylic acid.....2½ drams  
 Powdered valerian ..... 3 ounces  
 Powdered althæa ..... 3 ounces  
 Mix, give in one dose, daily.

**Water Farcy.**

Fowler's solution..... 2 ounces  
 Spirit of nitrous ether... 3 ounces  
 Water, quantity sufficient. 16 ounces  
 Tablespoonful in ½ pail of water 3 times each day. By taking a small quantity of the contents of the pail and rubbing on the horse's nose he will readily drink the mixture.

**Mash.**

Bran or pollard, ½ peck. Put it in a bucket and pour on it enough scalding water to wet it thoroughly. Let it be well stirred with a stick, or worked with the hands, and let it stand, covered up, until new-milk warm. Emollient and slightly laxative. When intended to be nutritive, oats should be scalded with the bran.

**A Blaze or Star in a Horse's Face.**

Take a razor and shave off the hair the form and size you wish the blaze or star to be made; then take a small quantity of oil of vitriol and with a feather anoint the part once, which will be quite sufficient. After the application of the vitriol the part will become a little sore; the inflammation may be readily removed and healed by washing the sore with copperas water. Great care should be used to prevent the vitriol from getting on the surrounding skin or upon the clothing. This may be somewhat cruel, but it is one of the methods used by jockeys for the purpose.

**MEDICINES FOR CATTLE.****Black Mixture.**

Tar ointment..... ½ ounce  
 Burnt sugar..... ½ ounce  
 Turpentine ..... 4 ounces

Mix the ointment with a little of the turpentine and stir in the burnt sugar; then add the rest of the turpentine.

**Cattle Condiment.**

Table salt..... 2 pounds  
 Barley meal..... 2 pounds  
 Ground rice..... 1 pound  
 Pea meal..... 1 pound  
 Linseed meal..... 1 pound  
 Powdered gentian ..... ¼ pound  
 Powdered fennel ..... ¼ pound  
 Powdered fenugreek ..... ¼ pound

Mix. Give a few tablespoonfuls with each morning and evening feed.

**Spiced Cattle Food.**

Bean meal..... 6 pounds  
 Indian meal..... 10 pounds  
 Linseed cake meal..... 3 pounds  
 Sulphur ..... ½ pound  
 Saltpetre ..... ½ pound  
 Common salt..... ½ pound  
 Fenugreek ..... ¼ pound  
 Gentian, powdered..... 2 ounces  
 Iron sulphate..... 1 ounce  
 Anise seed..... 1 ounce  
 Ginger ..... 1 ounce

Mix well, and give a few tablespoonfuls mornings and nights.

**Cattle Condiment.**

Magnesium sulphate..... 1 pound  
 Anise seed..... 1 ounce  
 Powdered ginger..... 1 ounce  
 Powdered gentian..... 1 ounce  
 Two tablespoonfuls morning and night.

**Cattle Spice.**

Locust beans, powdered... 5 pounds  
 Oil cake..... 5 pounds  
 Licorice, ground..... ½ pound  
 Gentian ..... 2 ounces  
 Fenugreek ..... 4 ounces  
 Cinnamon ..... 2 ounces  
 Two tablespoonfuls morning and night.

**Cattle Spice.**

Anise seed..... ½ pound  
 Allspice ..... ½ pound  
 Cinnamon ..... ½ pound  
 Ginger ..... ½ pound  
 Licorice ..... ½ pound  
 Turmeric ..... ½ pound  
 Mix and give 2 tablespoonfuls morning and night.

**Cattle Spice.**

Fenugreek ..... 5 pounds  
 Juniper berries..... 1 pound  
 Fennel seed..... 1 pound  
 Linseed ..... 1½ pounds  
 Sodium bicarbonate..... 1 pound  
 Gentian ..... 1 pound  
 Ginger ..... 1 pound  
 Salt ..... ½ pound  
 Sodium sulphate..... 1 pound  
 Asafetida ..... 1 ounce  
 Mix and sift. Two tablespoonfuls morning and night.

**Cattle Spice.**

Oil meal..... 5 pounds  
 Bean meal..... 3 pounds  
 Bran ..... 2 pounds  
 Common salt..... 2 ounces  
 Iron sulphate..... 1 ounce  
 Black pepper, crushed.... 2 ounces  
 Fenugreek ..... 2 ounces  
 Mix. A tablespoonful 3 times a day.

**Calf Meal.**

Pea meal..... 3½ pounds  
 Lentil meal..... 3½ pounds  
 Fenugreek ..... ½ pound  
 Barley meal..... 10 pounds  
 Linseed, crushed..... 7 pounds  
 Mix. Give a handful mixed with water or milk.

**Calf Meal.**

Crushed linseed..... 1 pound  
 Barley meal..... 2 pounds  
 Wheat meal..... 2 pounds  
 Mix. Give as directed in the preceding.

**Cattle Condition Powder.**

Antimony sulphide..... ½ pound  
 Flowers of sulphur..... ½ pound  
 Bean or malt flour..... 25 pounds  
 Dose: 1 tablespoonful in the feed.

**Cattle Fattening Powder.**

Iceland moss..... 100 parts  
 Speedwell herb..... 15 parts  
 Anise seed..... 5 parts  
 Caraway seed..... 5 parts  
 Ground together and added in small portions to fodder as an appetizer and fattener.

**Cattle Condition Powder.**

Gentian, powdered.....	4 pounds
Licorice, powdered.....	4 pounds
Fenugreek, powdered.....	16 pounds
Saltpetre .....	4 pounds
Common salt.....	4 pounds

Mix. Give a tablespoonful with each feed.

**Cattle Nutritive Powder.**

Fenugreek .....	4 pounds
Linseed .....	4 pounds
Juniper berries.....	4 pounds
Rosin .....	4 pounds
Mustard .....	4 pounds
Glauber's salt.....	3 pounds
Iron sulphate.....	3 pounds
Flowers of sulphur.....	3 pounds
Black antimony.....	1 pound
Saltpetre .....	1 pound
Coriander .....	1 pound

Mix. Give a tablespoonful 3 times a day.

**Cattle Powder.**

Aromatic powde.....	4 pounds
Asafetida .....	$\frac{1}{2}$ pound
Cream Tartar.....	1 pound
Antimony sulphide.....	1 pound

Mix. Dose: One tablespoonful.

**Cattle Powder.**

Iron sulphate.....	5 pounds
Cantharides .....	1 pound
Ginger .....	3 pounds
Antimony sulphide.....	6 pounds
Saltpetre .....	5 pounds
Flowers of sulphur.....	10 pounds
Linseed .....	10 pounds
Gentian .....	7 pounds
Cream tartar.....	3 pounds
Anise seed.....	5 pounds

Mix. Dose: One tablespoonful in the feed, or as a bolus.

**Cattle Powder.**

Gentian .....	1 pound
Fenugreek .....	$\frac{1}{2}$ pound
Fennel .....	$\frac{1}{2}$ pound
Common salt.....	3 pounds
Sodium bicarbonate.....	1 pound
Glauber's salt.....	4 pounds
Saltpetre .....	$\frac{1}{2}$ pound
Juniper berries.....	4 pounds

Mix. Dose: One tablespoonful.

**Milk Powder.**

Caraway .....	1 pound
Sweet flag.....	1 pound
Salt .....	$\frac{1}{2}$ pound
Sulphur .....	$\frac{1}{4}$ pound

Mix. Dose, 2 heaping tablespoonfuls twice daily in a quart of warm beer or milk.

**Milk Powder.**

Anise seed.....	1 pound
Fennel .....	1 pound
Salt .....	2 pounds
Black antimony.....	2 pounds

Mix and give as in the preceding.

**Milk Powder.**

Capsicum .....	1 dram
Anise seed.....	1 ounce
Caraway .....	1 ounce
Potassium nitrate.....	2 pounds
Epsom salt.....	10 ounces

Mix. Give as one dose. Useful when constipation is the cause of suppression of milk.

**Milk Powder.**

Powdered catechu .....	1 dram
Powdered ginger .....	$\frac{1}{2}$ ounce
Powdered gentian .....	$\frac{1}{2}$ ounce
Powdered opium .....	10 grains

Mix. Give as one dose.

**Milk Powder.**

Saltpetre .....	$\frac{1}{2}$ pound
Alum .....	$\frac{1}{2}$ pound
Sulphur .....	$\frac{1}{2}$ pound
Prepared chalk.....	$\frac{1}{2}$ pound
White bole.....	$\frac{1}{2}$ pound
Red cloves.....	3 pounds
Anise seed.....	5 pounds
Fennel .....	5 pounds
Salt .....	5 pounds

Mix and give one or two handfuls in the morning.

**Diarrhoea in Cows.**

Lactic acid.....	10 grams
Molasses .....	200 grams
Infusion of chamomile	
(3:100) .....	1,000 grams

The whole to be given in 2 days.

**Drench for Cattle.**

Sulphur, 8 ounces; ginger,  $\frac{1}{2}$  ounce; warm gruel, a quart. In rheumatism or joint felon.

**Drench for Cattle.**

Common salt, 6 ounces; mustard flour, a tablespoonful; grated ginger or ground pepper, of either a teaspoonful; gin,  $\frac{1}{4}$  pint; water, 2 pints.

**Drench for Cattle.**

Glauber or Epsom salt, 16 ounces (or in bad cases, with fever, 24 ounces); caraway seed, 1 ounce; warm gruel, a quart.

**Drench in Red Water.**

Magnesium sulphate, 8 to 16 ounces; sulphur, 2 to 6 ounces; ammonium carbonate,  $\frac{1}{2}$  ounce; ginger,  $\frac{1}{2}$  ounce; warm water, a sufficient quantity. A fourth of this every 6 hours till the bowels are sufficiently acted on.

**Mild Laxative and Tonic Drench.**

Epsom salt,  $\frac{1}{2}$  pound; sulphur, 4 to 6 ounces; ginger,  $\frac{1}{2}$  ounce; gentian,  $\frac{1}{2}$  ounce; warm water, a sufficient quantity.

**Drench for Constipation.**

Black antimony.....	1 dram
Cream tartar.....	2 drams
Aloes .....	1 ounce
Glauber's salt.....	1 pound
Warm chamomile tea.....	1 quart

Mix. For one dose. Repeat every 3 hours, if necessary.

**Drench for Constipation for Calves.**

Rochelle salt.....	2 ounces
Aloes .....	2 drams
Linseed meal.....	3 drams
Warm water.....	8 ounces

Give at one dose.

**Drench in Flatulent Colic with Costiveness.**

Aloes,  $1\frac{1}{2}$  ounces; potassium carbonate, 3 drams; ginger,  $\frac{1}{2}$  ounce; warm water, a pint; linseed oil, 8 ounces.

**Drench for Inflammation of the Liver.**

After bleeding, give: calomel,  $1\frac{1}{2}$  drams; opium,  $\frac{1}{2}$  dram; ginger, 2 drams; thick gruel, q. s. Six hours afterwards, give Epsom salt, 1 pound; sulphur, 6 ounces; linseed oil,  $\frac{1}{2}$  pint; gruel, a sufficient quantity.



**Laxative Drink for Cows That Are Kept on Hay.**

Aloes, 4 drams; ginger,  $\frac{1}{2}$  drams; water, a quart; Epsom salt, 6 ounces; sodium carbonate,  $\frac{1}{2}$  ounce. For one dose.

**Drench for Inflammation of the Liver.**

Epsom salt, 1 pound; caraway,  $\frac{1}{2}$  ounce; Barbadoes aloes,  $\frac{1}{4}$  ounce; in a quart of warm gruel. After the yellowness disappears, give half of this quantity with 20 grains of calomel, morning and night.

**Drench for Bloody Urine.**

Linseed oil, 1 pint; gruel, 1 pint; caraway seed, 2 drams; Epsom salt, 8 ounces (in warm water,  $\frac{1}{2}$  pint); tincture of opium, 2 drams.

**Drench for Red Water.**

Epsom salt, 8 to 12 ounces; sulphur, 2 to 4 ounces; ammonium carbonate,  $\frac{1}{2}$  ounce; ginger,  $\frac{1}{2}$  ounce; warm water, 4 pints. Give a fourth part every 6 hours till the bowels are acted on.

**Drench for Red Water.**

Glauber's salt, 12 ounces; sodium carbonate,  $\frac{1}{2}$  ounce; saltpetre,  $\frac{1}{4}$  ounce; sugar, 1 ounce; powdered caraway,  $\frac{1}{2}$  ounce in a quart of gruel. After the bowels are well open, give astringents or mild stimulants.

**For Bloody Urine.**

Lead carbonate..... 1 dram  
Sodium acetate..... 3 drams  
Powdered camphor..... 6 drams  
Precipitated chalk..... 6 drams

Mix and make 8 powders. Give one in bran mash morning and evening.

**Drench for Jaundice or Yellows.**

Sodium chloride,  $\frac{1}{2}$  ounce; sodium carbonate,  $\frac{1}{2}$  ounce; turmeric, 2 ounces; Glauber's salt, 6 ounces; powdered gentian and chamomile, 2 drams; gruel, q. s.

**Drench for Jaundice or Yellows.**

Castile soap,  $\frac{1}{2}$  ounce; Venice turpentine,  $\frac{1}{2}$  ounce; ginger, 3 drams; gentian, 1 ounce; rub the soap and turpentine in a mortar, and gradually add a pint of water, and afterwards the ginger and gentian.

**Drench for Jaundice or Yellows.**

Powdered cumin seed, aniseed, and turmeric, of each 2 ounces; grains of paradise and salt of tartar, each 1 ounce; mix. Slice 1 ounce of castile soap to mix with 2 ounces of treacle. Pour a quart of boiling ale upon all of the ingredients, and administer when lukewarm. To be repeated two or three times a day.

**Drench for Jaundice or Yellows.**

Sodium bicarbonate..... 1 ounce  
Juniper berries, crushed.. 1 ounce  
Glauber's salt..... 5 ounces  
Warm water..... 1 quart

Mix. Give at one dose mornings and evenings.

**Jaundice or Yellows.**

Aloes ..... 1 ounce  
Rhubarb ..... 1 ounce  
Cream tartar ..... 2 ounces  
Sweet flag..... 2 ounces  
Glauber's salt..... 2 ounces

Mix in fine powder and give a heaping tablespoonful in a quart of juniper infusion 3 times a day.

**Febrifuge Tonic Drench.**

Antimonial powder,  $\frac{1}{2}$  dram; camphor, 1 dram; Peruvian bark, 1 ounce; gruel, or decoction of arrowroot, or starch, enough to make two doses.

**Febrifuge Tonic Drench.**

In the decline of fevers and influenza. Emetic tartar,  $\frac{1}{2}$  dram; saltpetre, 2 drams; gentian, 3 drams; chamomile, 1 dram; ginger,  $\frac{1}{2}$  dram; pour on them a pint of boiling ale, and give when cool.

**Febrifuge Tonic Drench.**

Tartar emetic,  $\frac{1}{2}$  dram; gentian, 2 drams; digitalis,  $\frac{1}{2}$  dram; saltpetre,  $\frac{1}{2}$  ounce; spirit of nitrous ether, 4 drams; gruel, a sufficient quantity.

**Fever Drench.**

Saltpetre ..... 3 drams  
Glauber's salt..... 4 ounces  
Warm bran water..... 1 quart

Mix and give at night.

**Fever Drink.**

Sodium salicylate..... 1 ounce  
Magnesium sulphate..... 8 ounces  
Warm bran water..... 1 quart

Mix. Give at night.

**Worm Drench.**

For coughs from worms: oil of turpentine, 2 ounces; spirit of nitrous ether, 1 ounce; laudanum,  $\frac{1}{2}$  ounce; mix, and give in a pint of gruel.

**Cleansing Drink.**

Rosin, soap, of each  $\frac{1}{2}$  ounce; spermaceti,  $\frac{1}{2}$  ounce; aniseed, caraway seed, of each, 1 ounce; ginger,  $\frac{1}{2}$  ounce; treacle, 4 ounces; warm gruel, a quart.

**Cleansing Drink.**

Juniper berries, 3 ounces; birthwort, 2 ounces; fenugreek, 1 ounce; spermaceti, 2 ounces; antimony, 1 ounce; saffron,  $\frac{1}{2}$  ounce; in a quart of warm ale.

**Cure for Swelled Bags in Cows.**

Gum camphor,  $\frac{1}{2}$  ounce, to sweet oil 2 ounces; pulverize the gum, and dissolve over a slow fire.

**Swollen Udders in Cows and Sheep.**

Bleached linseed oil..... 4 ounces  
Glycerin ..... 1 ounce  
Saccharated solution of

lime .....  $\frac{1}{2}$  ounce  
Water, quantity sufficient. 12 ounces

Mix the last three liquids and shake up the oil with the mixture.

**Ringworm in Cattle.**

Carbolic acid..... 2 parts  
Glycerin ..... 17 parts  
Water ..... 17 parts

To be applied night and morning.

**Garget Ointment.**

Spirit of camphor..... 1 ounce  
Mercurial ointment..... 1 ounce  
Elder ointment ..... 8 ounces

Mix and apply morning and night.

**Bronchitis in Cattle.**

Fluidextract of belladonna 2 drams  
Solution of ammonium  
acetate ..... 4 ounces  
Water ..... 8 ounces

Give 3 times daily.

**Bronchitis in Cattle.**

Ammonium carbonate..... 3 drams  
 Spirit of nitrous ether.... 1 ounce  
 Water ..... 8 ounces  
 Give twice daily.

**Bronchitis in Cattle.**

Spirit of nitrous ether....1½ ounces  
 Aromatic spirit of am-  
 monia ..... 2 ounces  
 Camphor ..... 2 drams  
 Linseed tea..... 1 pint  
 Dissolve the camphor in the spirits and  
 add the linseed tea. Give every 4 hours.

**Burns and Scalds.**

Lime water..... 8 ounces  
 Linseed oil..... 8 ounces  
 Mix. Apply to the burns. The ointments  
 and healing salves used for horses can also  
 be used for cattle.

**Enema for Colic.**

Green soap..... 4 ounces  
 Sodium chloride..... 4 ounces  
 Raw linseed oil..... 8 ounces  
 Warm water..... 2 pints  
 Mix well and inject at one time.

**Drench for Colic.**

Magnesium sulphate..... 8 ounces  
 Linseed oil ..... 2 pints  
 Chamomile tea..... 6 pints  
 Dissolve the magnesium sulphate in the tea  
 and add the oil. Shake well and give a  
 quart every 4 hours till bowels move.

**Enema for Constipation.**

Green soap..... 4 ounces  
 Warm water..... 32 ounces  
 Mix well. Inject every hour till bowels  
 move.

**Hypodermic Injection for Constipation.**

Eserine sulphate.....2½ grains  
 Distilled water.....1½ drams  
 Inject.

**Diarrhoea in Cattle.**

Powdered nutgall ..... 6 drams  
 Powdered licorice root.... 6 drams  
 Warm water..... 1 pint  
 Give every 2 hours.

**Diarrhoea in Cattle.**

Powdered opium ..... 1 dram  
 Powdered peppermint .... 3 drams  
 Linseed meal..... 1 ounce  
 Warm water..... 1 pint  
 Mix. Give morning and evening.

**Diarrhoea in Sucking Calves.**

Powdered alum..... ½ ounce  
 Chalk ..... ½ ounce  
 Rye flour..... 1 ounce  
 Yolk of egg, sufficient.

Make into 5 pills. Give one every 5 hours.

**Diarrhoea in Sucking Calves.**

Hydrochloric acid..... 1 dram  
 Chamomile tea..... 4 ounces  
 Mix. Give one-half and repeat in 5 hours.

**Diarrhoea in Sucking Calves.**

Tannin ..... 16 grains  
 Cacao butter.....180 grains  
 Mix and make 4 suppositories. Insert one  
 morning and evening.

**Dysentery in Sucking Calves.**

Salicylic acid..... 40 grains  
 Tannic acid..... 40 grains  
 Infusion of anise seed.... 8 ounces

Mix. Give one-half at a dose and the other  
 in 4 hours.

**Dysentery in Sucking Calves.**

Salicylic acid..... 10 grains  
 Extract of krameria..... 30 grains  
 Cacao butter..... 1 ounce

Mix and make 10 suppositories. Insert one  
 after each evacuation.

**Eczema in Cattle.**

Oil of tar..... 1 fl. ounce  
 Glycerin ..... 2 fl. ounces  
 Alcohol ..... 29 fl. ounces

Mix and rub on the parts affected, after  
 cleansing carefully.

**Inflamed Eyes in Cattle.**

The same eye waters, etc., used for horses  
 may be used for cattle.

**Milk Fever.**

Valerian, cut..... 4 ounces  
 Sodium salicylate..... 1 ounce  
 Spirit of ether..... 3 drams  
 Boiling water..... 5 pints

Infuse the valerian with boiling water.  
 When the solution is cold, strain and add the  
 other ingredients. Give one pint every hour.

**Rickets in Calves.**

Levigated oyster shell.

Give as much as will lie on the point of a  
 knife 3 times a day.

**Ringworm or Tetter.**

Green soap..... 1 pound  
 Water ..... 1 pint  
 Pine tar..... ½ pound

Heat in water bath until uniform. Apply  
 once a day.

**Thrush in Calves.**

Alum ..... 5 drams  
 Honey .....1½ ounces  
 Sage tea..... 1 pint

Mix and dissolve. Wash the animal's mouth  
 every 2 hours with warm water, then apply  
 this lotion.

**Thrush in Calves.**

Rhubarb ..... 1 dram  
 Precipitated chalk..... 3 drams

Mix. Give every morning in a little milk.  
 This formula and the preceding one should  
 be used together.

**Tympanitis.**

Potassium sulphide..... ½ ounce  
 Rye flour..... ½ ounce  
 Lime water..... 1 pint

Mix. Give at a dose every ½ hour.

**Tympanitis.**

Ammonia water..... ½ ounce  
 Rye flour..... 1 ounce  
 Lime water..... 1 pint

Mix. Give every ½ hour.

**Tympanitis.**

Aromatic spirit of am-  
 monia ..... 2 ounces  
 Tincture of capsicum .... 2 drams  
 Tincture of ginger ..... 1 ounce  
 Water ..... 1 pint

Mix. For one dose. Repeat in ½ hour.

**Inflammation of Udder.**

Salicylic acid..... 2 drams  
 Camphorated oil..... 8 ounces  
 Mix and dissolve. Rub the udder carefully twice daily.

**Inflammation of Udder.**

Mercurial ointment..... 1 ounce  
 Camphorated oil..... 3 ounces  
 Salicylic acid..... 40 grains  
 Mix. Apply as directed in the preceding formula.

**Worms in Cattle.**

Tansy, powdered.....  $\frac{1}{2}$  ounce  
 Wormwood, powdered.....  $\frac{1}{2}$  ounce  
 Aloes, powdered.....  $\frac{1}{2}$  ounce  
 Dippel's oil..... 2 ounces  
 Raw linseed oil..... 8 ounces  
 Mix. Give at 1 dose and repeat in 5 hours.

**MEDICINES FOR HOGS.****Hog Cholera.**

No form of treatment has yet been found which is in every way satisfactory. The disease is a contagious one, and preventive measures and the enforcement of proper sanitary regulations are worth as much, if not more, than medicine.

**Hog Cholera.**

Iron carbonate..... 1 ounce  
 Sodium chloride..... 1 ounce  
 Potassium carbonate..... 1 ounce  
 Sulphur..... 1 ounce  
 Calcium oxide..... 1 ounce  
 Magnesium carbonate..... 2 ounces  
 Soap, powdered..... 2 ounces  
 Chalk..... 12 ounces  
 Carbolic acid..... 1 ounce  
 Mix well together. Give  $\frac{1}{4}$  ounce at each feed.

**Hog Cholera.**

Potassium nitrate..... 4 ounces  
 Black antimony..... 4 ounces  
 Gentian, in fine powder.. 4 ounces  
 Rosin..... 8 ounces  
 Turmeric..... 8 ounces  
 Madder..... 8 ounces  
 Sublimed sulphur..... 8 ounces  
 Mix well and give a tablespoonful with each feed.

**Hog Cholera.**

Sodium bicarbonate..... 2 ounces  
 Gentian root..... 2 ounces  
 Ginger..... 3 ounces  
 Sodium nitrate..... 1 ounce  
 Chalk..... 8 ounces  
 Mix. As a prophylactic, give 1 to 2 teaspoonfuls twice a day; as a cure, give 1 tablespoonful three or four times a day.

**Hog Cholera.**

Calcium phosphate, precipitated..... 8 ounces  
 Chalk..... 6 ounces  
 Magnesium carbonate..... 2 ounces  
 Capsicum.....  $\frac{1}{2}$  ounce  
 Mix well and give  $\frac{1}{2}$  tablespoonful with each feed.

**Loss of Appetite.**

Tartar emetic..... 15 grains  
 Ipecac, powdered..... 40 grains  
 Marshmallow, powdered... 1 dram  
 Mix and give as an emetic.

**Loss of Appetite.**

Glauber's salt..... 5 ounces  
 Common salt..... 5 ounces  
 Sodium bicarbonate..... 5 ounces  
 Black antimony..... 1 ounce  
 Gentian..... 1 ounce  
 Calamus..... 1 ounce  
 Mix well and give a tablespoonful twice daily.

**Colic in Hogs.**

Glauber's salt..... 6 drams  
 Peppermint..... 2 drams  
 Common salt..... 1 dram  
 Weak coffee..... 8 ounces  
 Mix. Give at one dose and repeat in 3 hours.

**Diarrhoea in Hogs.**

Ferrous sulphate..... 8 grains  
 Alum..... 8 grains  
 Sugar of milk..... 60 grains  
 Acacia..... 80 grains  
 Mix. Make as one powder and give one every three hours.

**Diarrhoea in Small Pigs.**

Rhubarb..... 2 grains  
 Precipitated chalk..... 15 grains  
 Make one powder. Give one twice daily in a tablespoonful of warm chamomile tea.

**Inflamed Eyes.**

Zinc sulphate..... 10 grains  
 Tincture of opium..... 20 drops  
 Chamomile tea (weak).... 4 fl. ounces  
 Mix. Apply to the eyes after washing them with lukewarm water.

**Milk Fever.**

Magnesium sulphate..... 2 ounces  
 Potassium nitrate..... 2 drams  
 Rye flour..... 2 drams  
 Water..... 4 ounces  
 Mix and dissolve. Give  $\frac{1}{2}$  ounce every hour.

**Swine Fever.**

Saltpetre.....  $\frac{1}{4}$  ounce  
 Sulphur..... 1 ounce  
 Epsom salt..... 5 ounces  
 Molasses..... 2 ounces  
 Water..... 1 pint  
 Mix well together. Shake and give one ounce every morning.

**Pock Liniment for Swine.**

Linseed oil..... 60 grams  
 Yolk of eggs..... 2  
 Pure carbolic acid..... 4 grams  
 Mix well together and apply with a brush.

**Swine Diarrhoea Mixture.**

Tincture of opium..... 2 drams  
 Tincture of valerian, ammoniated..... 3 drams  
 Infusion of catechu..... 2 ounces  
 Lime water..... 4 drams  
 Infusion of oak bark.... 4 ounces  
 Mix well. One ounce 2 or 3 times a day.

**Worm Medicine.**

Sodium sulphate, powdered 2 ounces  
 Tansy, powdered..... 5 drams  
 Castor oil..... 6 drams  
 Naphthalene..... 30 grains  
 Rye flour..... 1 ounce  
 Mix and make an electuary with molasses. Give one fourth every 2 hours.



## MEDICINES FOR SHEEP.

Most of the remedies described for cattle are equally useful for sheep, although the dose may be reduced a little.

### Hoof Ail in Sheep.

Muriatic acid and butter of antimony, of each, 2 ounces; white vitriol, pulverized, 1 ounce; mix. Lift the hoof and drop a little of it on the bottom, only once or twice a week. It kills the old hoof and a new one soon takes its place.

### Anaemia in Sheep.

Juniper berries, crushed... 1 pound  
Powdered sweet flag..... 1 pound  
Sodium chloride..... 1 pound

Mix and give a handful with the fodder once or twice a week.

### Colic Caused by Cold.

Capsicum ..... 30 grains  
Ginger ..... 2 drams  
Peppermint leaves..... 2½ drams  
Linseed meal..... 2½ drams  
Glauber's salt..... 2 ounces

Powder and mix well, and divide into four parts. Give one in a cupful of warm water or beer every hour.

### Colic, Caused by Overfeeding.

Sodium sulphate..... 2 ounces  
Chamomile ..... 2 drams  
Linseed meal..... 2 drams  
Fennel ..... 2 drams  
Castile soap..... 2 drams

Mix and divide into 4 powders. Give one every two hours in warm water and linseed oil.

### Constipation in Sheep.

Sodium sulphate..... 1 ounce  
Linseed meal..... 100 grains  
Sodium bicarbonate..... 50 grains  
Caraway ..... 50 grains

Powder and mix well. Give this powder in a cupful of warm water and ½ cupful of linseed oil. Repeat the dose in 3 hours.

### Diarrhoea in Sheep.

Ginger ..... 2 drams  
Wormwood ..... 2 drams  
Red oak bark..... 1 ounce  
Juniper berries..... ½ ounce  
Sodium chloride..... 5 ounces

Mix well and give a tablespoonful 3 times a day with food.

### Diarrhoea in Lambs.

Calamus ..... 2 ounces  
Rye flour..... ½ ounce  
Prepared chalk..... ½ ounce  
Rhubarb ..... ½ ounce  
Tannic acid..... 30 grains

Powder all, mix and make into a paste with honey. Give a piece of the size of a hazelnut mornings and nights.

### Eye Water for Sheep.

Lead water..... 1 pint  
Tincture of opium..... 1 dram  
Mix. Bathe the eyes twice daily.

### Zinc Eye Water for Sheep.

Zinc sulphate..... 20 grains  
Mucilage of sassafras pith 4 ounces  
Distilled water..... 4 ounces  
Mix and dissolve. Bathe the eyes twice daily.

### Arsenical Sheep Dip Powder.

White arsenic..... 1 pound  
Sulphur ..... 12 ounces

Mix. This quantity is for 40 gallons of water.

Boil the water and add the powder to it, along with one pound of washing soda or a 1-pound packet of soap powder; continue to boil for ten minutes, and allow to cool, when the wash is ready for use.

### Carbolic Sheep Dip.

Dissolve 40 pounds of soap in 10 gallons of water and add 10 pounds of pearl ash before bringing it to a boil. To this solution add two quarts of carbolic acid and the dip is finished. The soap generally used is made of 1 pound of caustic potash, with 1 pint of water and 4 pounds of tallow.

### Carbolic Dip for Scab.

Soap, soft..... 1 pound  
Crude carbolic acid..... 1 pound  
Water ..... 50 gallons

Dissolve the soap in 2 gallons of water, add the carbolic acid and the remainder of the water. Keep the animal ½ minute in the bath.

### Sheep Wash.

Arsenous acid..... 6 ounces  
Potassium carbonate..... 6 ounces  
Water ..... 14 gallons

Boil together for half an hour.

### Kerosene Dip.

Fresh skimmed milk (warm) 1 gallon  
Kerosene ..... 2 gallons

Mix in a churn or emulsifier till emulsification takes place. Use one gallon to 10 gallons of water.

### Kerosene Soap Dip.

Soap ..... 1 pound  
Water ..... 1 gallon  
Kerosene ..... 2 gallons

Dissolve the soap in the boiling water, then add the kerosene and emulsify. Use one gallon to 10 gallons of water.

### Law's Sheep Dip.

Tobacco ..... 16 pounds  
Oil of tar..... 3 pints  
Soda ash..... 20 pounds  
Soft soap..... 4 pounds  
Water ..... 50 gallons

Steep the tobacco and add the other ingredients to the solution.

### Texas Tobacco for Sheep.

Tobacco ..... 30 pounds  
Sulphur ..... 7 pounds  
Concentrated lye..... 3 pounds  
Water ..... 100 pounds

Steep the tobacco in three successive portions of water, expressing each time; then add the other ingredients to the solution, and stir well while in use.

### Scab Dips.

In 1904 the Department of Agriculture and Fisheries of Great Britain published the following formulas for lice, scabs and maggots in sheep, as the best after long experiments:

### Scab Dip.

Arsenic ..... 2½ pounds  
Washing soda..... 1¾ pounds  
Water ..... 100 gallons  
Boil all together until dissolved.

**Scab Dip.**

Arsenic .....	2½ pounds
Caustic soda.....	½ pound
Water .....	100 gallons

Boil all together until dissolved.

**Scab Dip.**

Arsenic .....	2½ pounds
Washing soda.....	1½ pounds
Sulphur .....	6 pounds
Water .....	100 gallons

Boil, and stir while using.

**Scab Dip.**

Arsenic .....	2 pounds
Sulphur .....	5 pounds
Water .....	100 gallons

Boil all together until dissolved.

**Scab Dip.**

Sulphur .....	25 pounds
Slaked lime.....	12½ pounds
Water .....	100 pounds

Boil all together until dissolved.

**Scab Dip.**

Carbolic acid.....	1½ pounds
Soft soap.....	5 pounds
Water .....	100 gallons

Mix.

**Scab Dip.**

Arsenic .....	1½ pounds
Washing soda.....	2½ pounds
Carbolic acid.....	1½ pounds
Water .....	100 gallons

Boil all together until dissolved.

**Scab Dip.**

Tobacco .....	35 pounds
Sulphur .....	10 pounds
Water .....	100 gallons

Infuse the tobacco, express and add the sulphur.

**Scab Dip.**

Tobacco .....	35 pounds
Sulphur .....	10 pounds
Carbolic acid.....	1 gallon
Water .....	100 gallons

Infuse the tobacco and mix as directed in the preceding formula.

**Scab Dip.**

Tobacco .....	25 pounds
Sulphur .....	10 pounds
Soft soap.....	5 pounds
Water .....	100 gallons

Infuse the tobacco and mix as in the preceding.

**To Mark Sheep Without Injury to the Wool.**

To 30 teaspoonfuls of linseed oil add 2 ounces of litharge, 1 ounce of lampblack. Boil all together and mark the sheep therewith.

**Worms in Lambs.**

For small worms, see remedies under cattle. For tape worm, use the following:

Aloes .....	1 dram
Oleoresin of male fern....	15 grains
Naphthalene .....	1 grain

Make into a pill with syrup. Give at one dose and repeat in 8 days if necessary.

**Foot Rot.**

Verdigris, 3 ounces; copper sulphate, 6 ounces; acetic acid, 6 fl. ounces; solution of antimony chloride, 1½ ounces; water, enough to make 20 fl. ounces. Boil for five minutes, or until dissolved.

**MEDICINES FOR DOGS AND CATS,****Astringent Balls for Distemper.**

Prepared chalk, 2 ounces; powdered gum arabic, ½ ounce; powdered catechu, ½ ounce; powdered oak bark, ½ ounce; powdered ginger, ¼ ounce; opium, 15 grains; palm oil, 1 ounce; beat well together. Dose, ¼ dram to 2 drams, morning, noon and night, in the advanced stage of distemper.

**Astringent Balls for Diarrhoea.**

Opium, 5 grains; catechu, 2 drams; gum arabic, 2 drams; ginger, ½ dram; syrup of poppies, quantity sufficient. Divide into 12, 9, or 6 balls; in diarrhoea.

**Astringent Balls for Diarrhoea.**

Opium .....	15 grains
Althaea .....	15 grains
Licorice root.....	45 grains

Make into 5 pills with syrup. Give one morning and evening.

**Astringent Balls for Diarrhoea.**

Myrrh, 1 dram; ipecacuanha, 20 grains; opium, 3 grains; chalk, 2 grains; iron carbonate, 1 dram. For 12, 9, or 6 balls.

**Astringent Balls for Diarrhoea.**

In obstinate cases; alum, 1 dram; chalk, 2 drams; opium, 6 drams; rosin, 3 drams; into 4, 6, or 8 balls.

**Astringent Balls for Diarrhoea.**

Catechu, 1½ drams; quinine sulphate, 20 grains; opium, 5 grains; ginger, 1 dram; conserve of roses, quantity sufficient to form a mass, to be divided into 8, 6, or 4 balls.

**Diarrhoea Remedy in Obstinate Cases.**

Lead carbonate.....	10 grains
Bismuth subnitrate.....	30 grains
Acacia .....	40 grains
Sugar .....	80 grains

Mix and divide into 10 powders. Give one powder every 3 hours.

**Diarrhoea Suppositories.**

Extract of krameria.....	30 grains
Cacao butter.....	5 drams

Make 10 suppositories. Insert one far up the rectum after each evacuation.

**Cough Balls, in Asthma, etc.**

Calomel, 3 grains; foxglove, 3 grains; cream of tartar, 1 dram; antimonial powder, 12 grains; honey to form 6 boluses. One twice a day.

**Cough Balls, in Asthma, etc.**

Digitalis, 20 grains; antimonial powder, 40 grains; saltpetre, 2 drams; sulphur, 3 drams; palm oil, 3 drams; or quantity sufficient. Divide into 10, 15 or 20 balls, according to the size of the dog, morning and night, interposing an emetic every third or fourth day.

**Cough Balls, in Chronic Asthma.**

Powdered squill, ½ grain to 1 grain; gum ammoniac, 5 grains; balsam of peru, 8 grains; benzoic acid, 1 grain; balsam of sulphur to form a ball.

**Cough Balls, in Asthma, etc.**

Extract of hemlock, ½ dram; extract of henbane, 10 grains; powdered digitalis, 20 grains; conserve of roses to form a mass. Divide into 8, 10 or 6 balls. One night and morning.

**Digestive Pills.**

Sulphur .....	35 grams
Valerian root,	
Jalap, .....	30 grams
Green hellebore root.....	6 grams
Althaea root.....	15 grams
Water, quantity sufficient.	

Make a mass and divide into 60 or 30 pills, for small or large dogs.

**Distemper.**

Turpeth mineral, 1 to 3 grains; asafetida, ½ dram; aloes, 20 grains; soap, 10 grains; syrup of poppies to form a ball. To be preceded by an emetic, and given every third day.

**Distemper (Laxative Powder).**

Calomel .....	1 grain
Sugar .....	10 grains

1 powder. Give every 5 hours.

**Distemper.**

Aloes .....	60 grains
Acacia .....	60 grains
Sodium nitrate.....	15 grains

Make 8 pills. One pill 3 times a day.

**Distemper.**

After an emetic, give a physic ball; and afterwards the following two or three times a day: antimonial powder, 2, 3 or 4 grains; nitre, 5, 10 or 15 grains; ipecacuanha, 2, 3 or 4 grains; form a ball. If the disease proceed to the debilitating stage, give a tonic ball; in the putrid or malignant stage, give astringent ball.

**Distemper.**

Camphor, 3 to 5 grains; charcoal, 10 grains; opium, 1 grain; aromatic confection, quantity sufficient to form a ball. In the malignant stage, with diarrhoea.

**Distemper Powder.**

Potassium nitrate.....	4 drams
Black antimony.....	2 drams
Sulphur .....	1 dram
Fennel (powdered).....	1 dram

Mix. From 10 to 30 grains of this is sufficient for a dose.

**Distemper Balls.**

Tartar emetic.....	3 grains
Calomel .....	18 grains
Powdered jalap.....	1 dram

Make into 12 pills. Give one twice a day.

**Pills for Distemper.**

Antimonial powder.....	2½ grains
Mercury with chalk.....	2 grains
Dover's powder.....	3 grains
Quinine sulphate.....	1½ grains
Extract of nux vomica....	½ grain

Make into 1 pill, one such to be given twice or three times a week.

**Liniment for Distemper.**

Ammonia liniment.....	8 ounces
Oil of turpentine.....	1 ounce

Mix. Apply to the backbone twice daily.

**Nervous Tremors in Distemper.**

Infusion of valerian (1:10)	5 ounces
Simple syrup.....	6 ounces
Rochelle salt.....	½ ounce
Spirit of ether.....	½ ounce

Mix. Give a tablespoonful 3 times a day.

**Cooling Lotion in Distemper.**

Spirit of camphor.....	1½ ounces
Alcohol .....	1½ ounces
Water, enough to make....	8 ounces

Mix. Apply to the head with a cloth.

**Eczema in Dogs.**

Sulphurated potassa, powdered .....	1 ounce
Pine tar.....	1 ounce
Green soap.....	8 ounces

Mix by the aid of a gentle heat. Wash the animal with the mixture every day. After washing off and drying use the following salve:

**Salve for Eczema.**

Beechwood creosote.....	1 dram
Water .....	2 drams
Zinc ointment.....	2 ounces

Mix.

**Epileptic Fits.**

Commercial zinc oxide....	30 grains
Purified sulphur,	
Jalap, of each.....	90 grains
Green hellebore.....	30 grains
Extract chamomile.....	75 grains

Make into 120 pills for small dogs and into 90 pills for large dogs.

**Epilepsy.**

Fluidextract of valerian.	1 dram
Syrup of buckthorn.....	3 drams

For cats, 20 drops every hour or two with milk, or catnip tea.

**Eye Remedies.**

Use the same remedies for sore and inflamed eyes as given for sheep.

**Mange.**

Aloes, finely powdered....	1 dram
Oil of turpentine.....	1 ounce
Sulphur .....	3 ounces
Lard .....	4 ounces

Make into a salve and use every day, after washing the animal.

**Mange.**

Sperm oil.....	8 ounces
Kerosene oil.....	8 ounces
Carbolic acid.....	½ ounce
Tar .....	1 ounce
Sulphur .....	1 ounce

Mix and rub in the sore.

**Mange.**

Benzine .....	10 ounces
Oil of cade.....	3 ounces
Coal tar.....	3 ounces
Soft soap.....	3 ounces
Oil of turpentine.....	3 ounces

Rub the soap and tar together in a mortar; then add the oil of cade; when perfectly smooth add gradually the oil of turpentine and benzene. Use twice a day.

**Mange Ointment.**

Salicylic acid.....	24 grains
Lard .....	1 ounce

Apply to sores on the head.

**Mange Ointment.**

Sulphur .....	1 dram
Balsam peru.....	1 dram
White precipitate ointment	1 dram
Lard .....	2 ounces

Use after an antiseptic wash.



**Mange.**

Sulphur .....	4 ounces
Sal ammoniac.....	$\frac{1}{2}$ ounce
Aloes .....	1 dram
Venice turpentine.....	$\frac{1}{2}$ ounce
Lard .....	6 ounces

Mix. After four applications wash well with soap and water.

**Mange Ointment.**

Sulphur .....	2 ounces
Powdered aloes.....	2 drams
Oil of turpentine.....	12 drams
Mercury ointment.....	2 drams
Lard .....	4 ounces

Mix, and apply twice daily.

**Wash for Red Mange.**

Corrosive sublimate, 20 grains; alcohol, 2 drams; dissolve and add milk of sulphur,  $\frac{1}{2}$  ounce; lime water,  $\frac{1}{2}$  pint. Apply by means of a sponge.

**Red Mange.**

Charcoal, 1 ounce; chalk, 1 ounce; sugar of lead, 1 dram; white precipitate, 2 drams; sulphur, 2 ounces; lard, 5 ounces.

Mix well. Apply twice a day after washing the dog with an antiseptic solution and drying.

**Balls for Red Mange.**

Calomel .....	6 grains
Powdered jalap.....	6 grains
Tartar emetic.....	2 grains
Glycerite of tragacanth, q. s.	

Mass, and divide into 4 balls. Give 1 ball every morning.

**For Scabby Mange.**

Sulphur, 4 ounces; sal ammoniac,  $\frac{1}{2}$  ounce; aloes, 1 dram; Venice turpentine,  $\frac{1}{2}$  ounce; lard, six ounces; mix. After 4 applications, wash well with soap and water.

**For Scabby Mange.**

Horse turpentine and palm oil, each  $\frac{1}{2}$  pound; train oil,  $\frac{1}{2}$  pint; melt together, and while cooling, stir in 3 pounds of flowers of sulphur.

**Pneumonia in Cats.**

Chlorodyne .....	8 drops
Solution of ammonium acetate .....	40 drops
Camphor water.....	1 ounce

Mix. Give a teaspoonful every 3 hours.

**Pneumonia in Cats.**

Ammonium carbonate.....	8 grains
Fluidextract of belladonna	10 drops
Spirit of nitrous ether.....	30 drops
Chloroform water.....	1 ounce

Mix. Give  $\frac{1}{4}$  teaspoonful every 3 hours.

**Soreness of Feet.**

Solution of ammonium acetate .....	2 ounces
Water .....	2 ounces
Glycerin .....	$\frac{1}{2}$ ounce

Sponge the animal's feet morning and evening.

**Purgative Remedy for Dogs.**

Calomel .....	12 grains
Aloes .....	3 drams
Opium .....	1 grain

Mix and make into 8 balls and give 1 every 4 or 5 hours till the bowels are relieved.

**For Scabby Mange.**

Charcoal powder, 2 ounces; sulphur, 4 ounces; salt of tartar, 1 dram; Venice turpentine,  $\frac{1}{2}$  ounce; lard, 6 ounces. Melt all together and stir until cool. Apply once a day.

**Rheumatic Remedy.**

Sodium salicylate.....	$\frac{1}{2}$ ounce
Water .....	8 ounces

Mix. A tablespoonful 3 times daily.

**Rheumatic Liniment.**

Spirit of camphor.....	3 ounces
Soap liniment.....	3 ounces

Apply to the painful limbs 3 times a day.

**Tonic for Dogs.**

Gentian .....	15 grains
Ginger .....	5 grains
Cascarilla .....	15 grains

Make one pill. Give one pill every day.

**Tonic for Dogs.**

Fowler's solution.....	1 dram
Syrup of ginger.....	3 drams
Water .....	5 ounces

A tablespoonful 3 times a day.

Useful in skin diseases, and in chorea or other nervous affections following distemper.

**Stomach Catarrh.**

Tartar emetic.....	$\frac{1}{2}$ grain
Ipecac .....	15 grains

Mix. Give as an emetic in a spoonful of water.

**Stomach Catarrh (Emetic in Diarrhoea).**

Veratrum viride.....	2 $\frac{1}{2}$ grains
Sugar .....	30 grains

Mix. Give in spoonful of water.

**Stomach Catarrh.**

Aloes .....	1 dram
Soft soap, enough to make a mass.	

Make into 3 balls, give one every 5 hours.

**Worms.**

Aloes, sulphur, prepared hartshorn, and juice of wormwood, made into a mass; the size of a hazel nut to be given 3 times a week, fasting, wrapped in butter.

**Worms.**

Santonin .....	$\frac{1}{2}$ dram
Castor oil.....	6 ounces

Tablespoonful daily, with milk or meat. Shake well before using.

**Worms.**

Santonin .....	2 grains
Powdered glass.....	3 grains
Powdered areca nut.....	5 grains
Powdered jalap.....	5 grains

Make one pill.

Dog pills are more easily given for being bulky.

**Worms.**

Jalap, 10 to 15 grains; calomel, 2 to 3 grains; mixed with butter; no cold liquid should be allowed.

**Worms.**

Aloes .....	1 dram
Soap .....	1 dram
Oleoresin of male fern.....	30 grains

Mix well and make 3 pills. Give one every 3 hours, keeping the day fasting.

**Worms.**

Powdered areca nuts, 8 grams (2 drams); mutton suet, a sufficient quantity. Divide into 8 pills—at once, or in two doses at intervals of three hours.

**Worms.**

Powdered areca nuts..... 10 grains  
Calomel ..... 1 grain

Mix. Give in a tablespoonful of sweetened water every 4 hours.

**Worms.**

Areca nut, powdered..... 30 grains  
Jalap ..... 10 grains

Make one ball with honey and give at night, following with castor oil in the morning.

**Tapeworm in Dogs.**

Oil of turpentine,  $\frac{1}{2}$  dram, mixed with yolk of egg; for very large dogs, 2 scruples. Some writers prescribe larger doses (1 to 2 drams), but these sometimes prove fatal.

**Tapeworm in Dogs.**

Turpentine .....  $\frac{1}{2}$  dram  
Oil of almond..... 2 drams

Make into an emulsion with acacia and syrup. Give at night.

**Worms.**

Areca nut..... 5 grains  
Santonin ..... 1 grain  
Molasses, enough to make 1 pill

Dose: one or two pills according to the size of the dog.

**Wounds and Sore Feet.**

Bruised oak bark..... 2 ounces  
Catechu ..... 1 ounce  
Water ..... 3 pints

Boil to 1 pint and strain. Apply to feet.

**Wounds and Sore Feet.**

Tannic acid..... 1 dram  
Boric acid..... 2 drams  
Water ..... 8 ounces

Dissolve by heat. Apply to feet.

**Wounds and Sore Feet.**

Salicylic acid..... 10 grains  
Aristol ..... 30 grains  
Balsam of peru..... 20 grains  
Benzoinated lard..... 2 ounces

Mix. Apply the salve after using one of the above lotions.

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## POULTRY AND CAGE BIRDS.

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**Imperial Egg Food.**

Oyster shells, in coarse powder ..... 24 ounces  
Carbonate of lime ..... 4 ounces  
Phosphate of lime ..... 4 ounces  
Powdered black pepper... 4 ounces  
Powdered red pepper.....  $\frac{1}{2}$  ounce  
Iron oxide.....  $\frac{1}{2}$  ounce

Powder and mix well. A teaspoonful to a quart of feed.

**Powder to Make Hens Lay.**

Powdered red pepper ..... 2 ounces  
Powdered allspice ..... 4 ounces  
Powdered ginger ..... 6 ounces

Mix well together. A tablespoonful to be mixed with every pound of food and fed 2 or 3 times a week. Also feed fresh meat, finely chopped.

**Poultry Powder.**

Mustard ..... 20 ounces  
F uggreek ..... 15 ounces  
Ground oyster shells..... 12 ounces  
Ground bone..... 8 ounces  
Sodium sulphate..... 4 ounces  
Capsicum ..... 10 ounces  
Antimony sulphate..... 10 ounces  
Iron oxide..... 10 ounces  
Corn flour..... 20 ounces  
Asafetida ..... 1 ounce

Powder each separately, then mix well and use as above.

**Powder to Make Hens Lay.**

Powdered egg shells..... 4 ounces  
Sulphate of iron..... 4 ounces  
Powdered capsicum..... 4 ounces  
Powdered fenugreek..... 2 ounces  
Powdered black pepper... 1 ounce  
Silver sand..... 2 ounces  
Powdered dog biscuit..... 6 ounces

**Mix.**

A tablespoonful to be mixed with sufficient meal or porridge to feed 20 hens.

**Poultry Powder.**

Ground bone..... 12 ounces  
Ginger ..... 2 ounces  
Gentian ..... 1 ounce  
Capsicum ..... 1 ounce  
Sulphur ..... 1 ounce

Mix a teaspoonful to a quart of feed.

**Egg-producing Spices.**

Sawdust .....  $\frac{1}{2}$  pound  
Red sandalwood..... 2 ounces  
Fenugreek ..... 2 ounces  
Capsicum ..... 2 ounces

Mix well. One teaspoonful with feed for 8 or 10 fowls, 3 to 5 times a week.

**Egg Powder.**

Licorice root..... 6 ounces  
Gentian ..... 1 dram  
Capsicum ..... 1 dram  
Fenugreek ..... 1 dram  
Black antimony..... 2 drams

Mix. Give as directed in the preceding.

**Egg Powder.**

Powdered cayenne..... 2 drams  
Hardwood sawdust..... 6 ounces  
Ground lentils..... 4 ounces  
Oatmeal ..... 8 ounces

Mix well, give as directed in the formula for "Egg-producing Spices."

**Egg Powder.**

Capsicum ..... 6 ounces  
Ginger ..... 1 ounce  
Allspice ..... 1 ounce  
Anise ..... 1 ounce  
Copperas ..... 1 ounce  
Licorice root..... 6 ounces

Mix well. Give as directed for "Egg-producing spices."

**Egg Powder.**

Turmeric ..... 2 ounces  
Gentian ..... 2 ounces  
Linseed ..... 12 ounces

Powder and mix. Give as directed for "Egg-producing Spices."

**Chicken Cholera.**

Sulphuric acid..... 1 fl. ounce  
 Iron sulphate..... 16 ounces  
 Water (to dissolve)..... 1 gallon  
 Mix. Add 1 ounce of this mixture to a pint of water, and supply in place of water to drink. Or, mix with meal or other food.

**Chicken Cholera.**

A remedy promulgated by the Department of Agriculture is alum alone, giving 3 or 4 teaspoonfuls of alum water daily, and mix with the feed (corn meal) strong alum water. This is said to cure the very worst cases.

Another remedy is to feed raw onions, chopped fine, mixed with other food, about twice a week.

**Chicken Cholera.**

Iron sulphate..... 1 part  
 Red pepper pods..... 1 part  
 Black pepper..... 2 parts  
 Phosphate of lime..... 8 parts  
 Fenugreek..... 4 parts

Powder, and add 4 parts of white sand, and mix the whole thoroughly. To be mixed with the food of fowls, a level tablespoonful being sufficient for each dozen chickens.

**Chicken Cholera.**

The following remedies and treatment have been proposed: Take of crystals of carbolic acid, 2 ounces; sodium hyposulphite, 2 ounces; dissolve in 1 gallon of clean water; add of this solution 1 or 2 ounces to the gallon of water that the fowls drink, or mix it in the same proportion in a mash made of ground grain or other food. This not only relieves when sick, but is an excellent preventive. Chicken cholera can only be introduced by direct importation of the virus, either with fowls or by birds, rabbits or insects carrying it from neighboring farms. The virus is never carried through the air. When more than one fowl dies within a short period, cholera should be suspected. Separate the fowls as much as possible, and give restricted quarters where they may be observed, and where disinfectants may be freely used. If the peculiar diarrhoea sets in, kill the sick ones and change the remainder to fresh ground. The infected excrements should be carefully scraped up and burned, and the enclosure thoroughly disinfected with a ½ per cent solution of sulphuric acid, or a 1 per cent solution of carbolic acid, which may be applied with a common watering pot. Burn the dead birds. The germs of the disease are taken into the system only by the mouth, and therefore, the watering-troughs and feeding-places must be kept perfectly sweet by frequent disinfection with one of the solutions mentioned. Three weeks after the last case of sickness, the fowls may again be placed together in a disinfected run. Keep them, however, under observation for two or three months before allowing them again to roam over the old places.

**Lice on Poultry.**

Carbolic acid, crude..... 8 ounces  
 Water..... 7½ pints

Wash the woodwork with this mixture and sprinkle in the nests and on the floor.

**Lice on Poultry.**

Carbolic acid, crude..... 6 ounces  
 Carbon disulphide..... 5 ounces  
 Oil of tar..... 2 ounces  
 Kerosene..... 1 gallon

Apply to roosts, walls, etc., with a brush.

**Roup Remedy.**

Potassium chlorate..... 2 ounces  
 Cubeb..... 2 ounces  
 Anise..... 1 ounce  
 Licorice root..... 3 ounces

Powder and mix well. A teaspoonful with food for 60 hens.

**Roup Pills.**

Calomel..... 1 grain  
 Antimonial powder..... 1 grain  
 Powdered licorice..... 1 grain  
 Copaiba, q. s.

Make 1 pill. Give a pill night and morning.

**Tonic Pills for Poultry.**

Iron sulphate..... 2 drams  
 Extract of gentian..... ½ dram  
 Phosphate lime..... 1 dram

Make 40 pills. Give one every morning.

**Worms in Poultry.**

Alum..... 4 ounces  
 Armenian bole..... 20 grains  
 Cayenne pepper..... 20 grains  
 Essence of bergamot..... 2 minims

Powder thoroughly and mix. A teaspoonful mixed with their food and administered daily suffices for forty chickens, turkeys or pheasants.

**Gapes in Pheasants.**

Iron sulphate..... 1 dram  
 Capsicum..... 4 drams  
 Fenugreek..... 1 ounce  
 Red saunders..... 1 ounce  
 Licorice..... 2 ounces

Molasses, enough to make a soft pill mass.

Mix.

**Mixed Bird Seed.**

Hemp..... 5 parts  
 Canary..... 4 parts  
 Millet..... 1 part  
 Maw..... 1 part

Mix.

**Bird Food.**

Pea meal..... 1 pound  
 Coarse sugar..... ½ pound  
 Fresh butter..... 2 ounces  
 Yolks of eggs..... 2

Mix these well together and brown gently in a frying pan. When cold mix well with:

Poppy seed..... 2 ounces  
 Bruised hemp seed (separated from the husks)..... 2 pounds

**Canary Coloring.**

Cayenne..... 2 grains  
 Turmeric..... 2 grains  
 Sugar..... 1 ounce

Mix. One or two teaspoonfuls with food.

**Canary Coloring.**

Powdered cayenne..... ½ ounce  
 Powdered turmeric..... 3 drams  
 Iron peroxide..... 1 dram  
 Sugar..... 1 ounce

Mix. Put a pinch in the seed-box.

**Canary Bird Food.**

Poppy heads, powdered... 1 ounce  
 Cuttlefish, powdered..... 1 ounce  
 Dried yolk of egg..... 2 ounces  
 Sugar, granulated..... 2 ounces  
 Wheat flour biscuit, dried and powdered..... 8 ounces

Mix all together.



**German Paste.**

Take 4 fresh eggs, boiled very hard,  $\frac{1}{4}$  pound white pea meal, and about a tablespoonful of good salad oil—if the least rancid it will not do. The eggs must be grated very fine and mixed with meal and olive oil, and the whole then be pressed through a tin colander, to form it into grains like small shot; it should next be put into a frying pan, set over a gentle fire, and gradually stirred with a broad knife till it be partially wasted and dried, the test of which will be its yellowish brown color. All insect eating birds may be kept upon this food throughout the year, except when they appear drooping and unwell, or at moulting time, when a few meal worms may be given to them twice or three times a day.

**German Paste.**

Cornmeal .....	8 ounces
Sweet almonds, blanched. ....	4 ounces
Fresh butter .....	1 ounce
Sugar, powdered.....	1 ounce
Saffron .....	5 grains
Eggs .....	1 or 2

Pass the eggs through a fine grater, and add to the other ingredients. Beat to a smooth paste with cold water, and granulate the mass by passing through a coarse grater, then expose the product to the air in a warm place until quite hard and dry.

**German Paste.**

Blanched sweet almonds..	1 pound
Pea meal.....	2 pounds
Butter .....	3 ounces
Saffron, a few grains.	
Honey, quantity sufficient.	

Mix. Form the whole into a paste and granulate it by pressing it through a colander. Some add the yolks of two eggs.

**Mocking Bird Food.**

Hemp seed.....	3 parts
Toasted wheat bread.....	2 parts
Maw seed.....	1 part
Ox heart.....	1 part

Boil the ox heart well in water, cut small and place it on a pan in an oven, where it must be allowed to become perfectly dry and crisp. All the ingredients must then be thoroughly mixed and ground in a mill to coarse powder.

**Mocking Bird Food.**

Hemp seed.....	1 ounce
Rice .....	2 ounces
Broken crackers.....	8 ounces
Corn .....	9 ounces
Capsicum .....	10 grains

Reduce to coarse powder and mix.

**Mocking Bird Food.**

Ox heart, dried.....	2 parts
Poppy seed cake.....	2 parts
Bread, dried.....	2 parts
Ant's eggs, dried.....	2 parts
Hemp seed.....	1 part
Corn meal.....	1 part
Lard .....	1 part

Grind to a coarse powder and mix with the lard, previously melted. When given to the birds, mix with an equal quantity of grated carrots.

**Mocking Bird Food.**

Corn meal.....	2 parts
Pea meal.....	2 parts
Moss meal.....	1 part

Add a little lard, but not enough to make it too greasy, and sweeten with a little molasses. Fry the mixture in a frying-pan for one-half hour, stirring constantly and

taking care not to let burn. The moss meal in this formula is prepared by drying and grinding the German moss seed.

**Mocking Bird Food.**

Hemp seed, crushed.....	3 pounds
Crackers, soda.....	1 pound
Corn meal.....	1 pound
Cayenne pepper, powdered	6 drams
Lard .....	1 ounce

Prepare as directed in the preceding formula.

**Food for Redbirds.**

Rice, unshelled.....	6 ounces
Wheat, cracked.....	8 ounces
Sunflower seed.....	8 ounces
Canary seed.....	10 ounces
Hemp seed.....	16 ounces

Mix and grind to coarse powder.

**Parrot Feed.**

Sunflower .....	8 ounces
Safflower seed.....	2 ounces
Millet seed.....	1 ounce
Buckwheat .....	1 ounce
Ground nut.....	1 ounce
Capsicum .....	15 grains

Mix.

**Food for Doves.**

Millet seed, yellow and red .....	2 pounds
Buckwheat .....	8 ounces
Crushed wheat.....	6 ounces
Maize .....	4 ounces
Hemp .....	2 ounces
Rice .....	1 ounce
Peas .....	1 ounce

Mix.

**Tonic Pills for Pigeons.**

Iron sulphate.....	1 dram
Powdered capsicum.....	20 grains
Powdered extract of nuxvomica .....	6 grains
Powdered gentian .....	$\frac{1}{2}$ dram

Mix and make 60 pills. Give each pigeon 5 or 6 a day.

**Constipation Remedy for Birds.**

Fluidextract of senna....	2 drams
Syrup of manna.....	1 ounce
Fennel water.....	3 ounces

A few drops on a lump of sugar daily.

**Asthma in Canaries.**

Spirit of chloroform.....	$1\frac{1}{2}$ drams
Iron citrate.....	45 grains
Tincture of capsicum.....	3 drams
Fennel water.....	$3\frac{1}{2}$ ounces

Mix and dissolve. A few drops on a lump of sugar once daily.

**Diarrhoea Remedy in Birds.**

Tincture of iron chloride.	2 drams
Paregoric .....	2 drams
Caraway water.....	$3\frac{1}{2}$ ounces

Use like the preceding.

**Tonic Medicine.**

Tincture of iron chloride.	4 drops
Tincture of cinchona ....	1 dram
Glycerin .....	2 drams
Caraway water, enough to make .....	2 ounces

A few drops on a lump of sugar daily.

**Antiseptic Wash for Cage Birds.**

Chinosol .....	2 drams
Cinnamon water.....	4 ounces
Water, enough to make...	20 ounces

Mix and filter.

Add a teaspoonful to the bird's bath water. For washing the cage use a tablespoonful to a pint of hot water.

# PART FOUR.

## Family Medicines.

### COUGH REMEDIES.

#### Cough Mixture.

Ammonium chloride.....	1 dram
Spirit of ether compound..	6 fl. drams
Syrup of wild cherry.....	2 fl. ounces
Water, to make.....	8 fl. ounces

Dose, teaspoonful.

#### Cough Mixture.

Syrup of squill.....	1 ounce
Wine of ipecac.....	½ ounce
Tincture of camphor, com- pound .....	½ ounce
Syrup .....	2 ounces
Water, to make.....	1 pint

Dose, 1 to 2 teaspoonfuls, according to age.  
A good cough mixture for children.

#### Cough Mixture.

Morphine acetate.....	8 grains
Syrup of wild cherry.....	4 ounces
Copaiba .....	1 ounce
Tincture of lobelia.....	2 ounces
Oil of sassafras.....	20 drops
Syrup of tolu, enough to make .....	1 pint

Take a teaspoonful when the cough is  
troublesome. Shake the bottle before using.

#### Cough Mixture.

Ammonium muriate.....	2 drams
Spirit of nitrous ether....	½ ounce
Tincture of aconite .....	1 dram
Tincture of opium, cam- phorated .....	1 ounce
Syrup of tolu, enough to make .....	1 pint

Mix. Dose: One or two teaspoonfuls every  
3 hours.

#### Cough Mixture.

Spirit of nitrous ether....	2 ounces
Wine of ipecac.....	½ ounce
Deodorized tincture of opium .....	½ ounce
Syrup of tolu, enough to make .....	1 pint

A teaspoonful two or three times daily.

#### Cough Mixture.

Ammonium chloride.....	1½ ounces
Chloroform .....	½ ounce
Brown mixture, enough to make .....	1 pint

Mix. Shake well and take a teaspoonful  
three or four times a day.

#### Cough Mixture.

Syrup of tolu.....	1 ounce
Syrup of wild cherry.....	2 ounces
Tincture of hyoscyamus..	1 ounce
Compound spirit of ether	1 ounce
Water, enough to make...	6 ounces

Dose, a teaspoonful.

#### Cough Mixture.

Syrup of wild cherry.....	6 ounces
Camphor water.....	8 ounces
Syrup of ipecac.....	2 ounces

Mix. A teaspoonful every two or three

#### Cough Mixture.

Tincture of opium, camp.	2 ounces
Tincture of sanguinaria ..	½ ounce
Wine of ipecac.....	½ ounce
Syrup of wild cherry.....	4 ounces
Water, enough to make...	1 pint

Mix. Dose: 1 or 2 teaspoonfuls every 3  
hours.

#### Cough Mixture.

Syrup of wild cherry.....	12 ounces
Syrup of ipecac .....	1 ounce
Compound tincture of cin- chona .....	2 ounces
Deodorized laudanum.....	1 ounce

Mix. A teaspoonful as desired.

#### Cough Mixture.

Wild cherry bark.....	240 grains
Senega .....	240 grains
Ipecac .....	120 grains
Extract of conium.....	15 grains
Tincture of cardamom, compound .....	1 ounce
Spirit of juniper compound..	1 ounce
Water, enough to make...	10 ounces

Percolate the solid ingredients with suffi-  
cient water to make 8 fluid ounces; then add  
the other ingredients. Two teaspoonfuls in  
water constitute the usual dose to relieve  
cough.

#### Cough Mixture.

Fluidextract of squill ....	½ ounce
Fluidextract of senega ..	½ ounce
Ammonium muriate.....	½ ounce
Ammonium bromide.....	2 drams
Brown mixture, enough to make .....	1 pint

Mix. Shake and take 1 or 2 teaspoonfuls  
every 3 hours.

#### Cough Mixture.

Wine of antimony.....	½ ounce
Vinegar of squill.....	½ ounce
Laudanum .....	3 drams
Oil of wintergreen.....	20 drops
Sugar-house molasses.....	8 ounces

Mix. Shake and take a teaspoonful every  
2 hours.

#### Wild Cherry Cough Syrup for Children.

Ammonium bromide.....	1 ounce
Wine of ipecac.....	2½ ounces
Syrup of wild cherry.....	5 ounces
Syrup of squill .....	5 ounces
Glycerin .....	2½ ounces
Tincture of cudbear.....	¼ ounce
Chloroform water, to make	30 ounces

Mix. Dose: 15 drops to two teaspoonfuls.

**Red Cough Mixture.**

(Compound Chloroform Mixture, B. C. P.)  
 Diluted hydrobromic acid.  $2\frac{1}{2}$  fl. ounces  
 Chloroform ..... 25 minims  
 Tincture of cudbear..... 2 fl. ounces  
 Morphine hydrochloride...  $\frac{1}{4}$  grains  
 Cherry-laurel water..... 300 minims  
 Syrup of balsam of tolu... 5 fl. ounces  
 Syrup, to make..... 20 fl. ounces

Dissolve the morphine hydrochloride in the diluted hydrobromic acid. Add the syrup of balsam of tolu and the cherry-laurel water, then add the chloroform previously dissolved in the tincture of cudbear, and make up the required volume with syrup. Dose,  $\frac{1}{2}$  to 2 fl. drams.

**Tolu, Tar and Wild Cherry.**

Tincture of tolu..... 1 fl. ounce  
 Camphorated tincture of opium ..... 2 fl. ounces  
 Fluidextract of ipecac.... 1 fl. dram  
 White pine bark.....  $\frac{1}{2}$  ounce  
 Wild cherry bark..... 1 ounce  
 Pine tar..... 2 drams

Mix the tar and ground drugs, adding pine sawdust if necessary. Then add the tinctures and fluidextracts. Pack in a percolator, pour on the menstruum, and let stand for 12 hours. Now percolate with 25 per cent. alcohol until 18 fl. ounces of percolate are obtained, in which dissolve 1 ounce of ammonium chloride and 22 ounces of sugar by cold percolation. Lastly, add 3 fl. ounces of glycerin.

**Linseed Tea.**

Whole linseed..... 1 ounce  
 Sugar ..... 1 ounce  
 Cut licorice root.....  $\frac{1}{2}$  ounce  
 Lemon juice.....  $\frac{1}{2}$  fl. ounce  
 Boiling water..... 1 pint

Macerate for several hours and pour off clear.

**Cough Mixture.**

Tincture of aconite .....  $\frac{1}{2}$  ounce  
 Tincture of belladonna ...  $\frac{1}{2}$  ounce  
 Water ..... 15 ounces

Mix. A teaspoonful every two or three hours.

**Cough Mixture.**

Sulphuric ether.....  $1\frac{1}{2}$  ounces  
 Tincture of hyoscyamus... 4 ounces  
 Syrup of wild cherry.... 4 ounces  
 Syrup of tolu..... 4 ounces  
 Water, enough to make... 1 pint

Mix. A teaspoonful every two or three hours.

**Cough Mixture.**

Ammonium muriate.....  $\frac{1}{2}$  ounce  
 Ammonium bromide..... 2 drams  
 Sodium bromide..... 2 drams  
 Tincture of aconite ..... 1 dram  
 Tincture of belladonna ... 1 dram  
 Syrup of tolu..... 8 ounces  
 Water, enough to make... 1 pint

Mix. One or 2 teaspoonfuls every 3 hours.

**Bronchitis Mixture.**

Wine of ipecac..... 1 ounce  
 Tincture of squill..... 2 ounces  
 Syrup of tolu..... 5 ounces  
 Water ..... 8 ounces

Mix. A teaspoonful every three or four hours.

**Bronchitis Mixture.**

Ammonium carbonate ..... 2 drams  
 Heroin hydrochloride.... 4 grains  
 Tincture of sanguinaria... 4 drams  
 Syrup of wild cherry.... 8 ounces  
 Water, enough to make... 1 pint

Mix. One or 2 teaspoonfuls every 3 hours.

**Bronchitis Mixture.**

Ammonium carbonate..... 2 drams  
 Syrup of tolu..... 4 ounces  
 Tincture of squill..... 5 drams  
 Compound tincture of cinchona ..... 2 ounces  
 Spirit of chloroform.....  $\frac{1}{2}$  dram  
 Rose water, enough to make ..... 1 pint

Mix. Dose, 1 fluid dram every four hours.

**Bronchitis Mixture.**

Ammonium carbonate ..... 2 drams  
 Ammonium muriate ..... 4 drams  
 Fluidextract of senega ... 3 drams  
 Fluidextract of squill ... 3 drams  
 Syrup of wild cherry.... 8 ounces  
 Water, enough to make... 1 pint

Mix. Dose: One or 2 teaspoonfuls every 3 hours.

**Lobelia Bronchitis Mixture.**

Potassium bicarbonate.... 5 grains  
 Tincture of lobelia, ether.. 15 minims  
 Spirit of chloroform..... 10 minims  
 Distilled water, enough to make ..... 1 ounce

Mix. For a dose. Give one dose every 4 hours.

**Brown Mixture (Improved).**

Extract of licorice, purified 1 ounce  
 Dextrin syrup (glucose)... 10 ounces  
 Ammonium chloride..... 1 ounce  
 Tincture of opium, camphorated ..... 1 ounce  
 Wine of antimony.....  $\frac{1}{2}$  ounce  
 Spirit of nitrous ether...  $\frac{1}{4}$  ounce  
 Water, enough to make... 16 ounces

Mix. Dose, 1 to 4 teaspoonfuls.

**Compound Lobelia Cough Mixture.**

Potassium iodide..... 4 drams  
 Ammonium carbonate..... 2 drams  
 Ethereal tincture of lobelia ..... 1 ounce  
 Spirit of chloroform..... 1 ounce  
 Ipecacuanha wine..... 2 drams  
 Infusion of senega, enough to make..... 1 pint

Dissolve and mix. A tablespoonful in a wineglassful of water every 4 hours. Useful in bronchitic asthma.

**Expectorant Cough Mixture.**

Tincture of blood root... 1 ounce  
 Syrup of ipecac..... 6 ounces  
 Tincture of lobelia..... 1 ounce  
 Glycerin ..... 8 ounces

A teaspoonful every two or three hours.

**Expectorant Cough Mixture.**

Tincture of blood root... 1 ounce  
 Fluidextract of senega ... 4 drams  
 Fluidextract of squill ... 4 drams  
 Ammonium carbonate.... 2 drams  
 Glycerin ..... 6 ounces  
 Syrup of tolu..... 6 ounces  
 Water, enough to make... 1 pint

Mix. A teaspoonful every 2 or 3 hours.

**Cough Mixture for Children.**

Deodorized tincture of opium ..... 2 drams  
 Wine of antimony..... 2 drams  
 Fluidextract of valerian.. 1 ounce  
 Simple syrup..... 4 ounces  
 Water, enough to make... 1 pint

Mix. A teaspoonful every hour or two until cough is controlled.



**Cough Mixture for Children.**

Compound syrup gly-	
cyrrhiza .....	2 ounces
Syrup of wild cherry.....	1 ounce
Syrup of tolu .....	1 ounce

Mix. One-half teaspoonful three or four times a day for infants, larger doses for children.

**Cough Mixture for Children.**

Ammonium bromide.....	3 drams
Chloroform water.....	4 ounces
Wine of ipecac.....	1 ounce
Syrup of wild cherry ....	2 ounces
Syrup of tolu .....	2 ounces
Syrup of blackberry .....	4 ounces
Simple syrup, enough to make .....	16 ounces

Mix. If desired more powerfully sedative add 20 minims tincture henbane for each ounce of the mixture.

**Cough Mixture for Children.**

Ammonium bromide.....	2 drams
Sodium bromide.....	3 drams
Wine of ipecac .....	6 drams
Wine of antimony .....	4 drams
Syrup of wild cherry.....	4 ounces
Syrup of tolu .....	8 ounces
Water, enough to make...	1 pint

Mix. Dose: One teaspoonful every 2 hours.

**Cough Mixture.**

Salicylic acid.....	6 drams
Solution acetate of ammonia .....	10 ounces
Syrup .....	6 ounces

Mix. Take a teaspoonful every three or four hours.

**General Cough Mixture.**

Syrup of squill .....	1 ounce
Syrup of ipecac .....	1 ounce
Syrup of tolu .....	1 ounce
Spirit of nitrous ether.....	1 ounce
Powdered extract of licorice .....	30 grains

Mix. Shake well and take a teaspoonful every few hours, as required.

**General Cough Mixture.**

Syrup of squill .....	4 ounces
Syrup of senega .....	4 ounces
Syrup of ipecac .....	2 ounces
Tincture of opium, camphorated .....	2 ounces
Brown mixture.....	4 ounces

Shake and give one or two teaspoonfuls every 2 or 3 hours.

**Cough Syrup.**

Ammonium chloride.....	4 drams
Morphine hydrochloride....	8 grains
Water, enough to dissolve.	

Then add:

Fluidextract of ipecac....	4 drams
Compound syrup of squill	1 ounce
Syrup of squill .....	2 ounces
Syrup of wild cherry.....	6 ounces
Syrup of licorice, enough to make.....	1 pint
Spirit of chloroform.....	4 drams

Mix. A teaspoonful once in three or four hours, as needed. Take last dose at bed time.

**Excelsior Cough Syrup.**

Morphine sulphate.....	8 grains
Tartar emetic.....	4 grains
Fluidextract of ipecac....	90 minims
Tincture of blood root....	1 ounce
Water .....	6 ounces
Syrup, enough to make..	2 pints

Heat the water, add the morphine sulphate and tartar emetic; stir until dissolved and add the syrup cold; shake, and to this mixture add the fluidextract of ipecac, and the tincture of blood root. Dose for adults, 1 teaspoonful three times daily and after each severe fit of coughing; for children, in proportion to age.

**Cough Syrup.**

Tincture black cohosh....	1 ounce
Tincture of blood root....	1 ounce
Paregoric .....	1 ounce
Syrup of ipecac .....	1 ounce
Syrup of squill .....	1 ounce
Syrup of tolu .....	1 ounce

Mix; take one or two teaspoonfuls, as required.

**Expectorant Cough Syrup.**

Tartar emetic.....	4 grains
Ammonium chloride.....	1 ounce
Chloral hydrate.....	4 drams
Glycerin .....	8 ounces
Syrup of wild cherry, enough to make.....	1 pint

Mix. Two teaspoonfuls every hour or two.

**Cough Syrup.**

Ammonium muriate.....	4 drams
Potassium chlorate.....	2 drams
Heroin hydrochloride.....	4 grains
Syrup of ipecac .....	2 ounces
Syrup of tolu .....	8 ounces
Water, enough to make...	1 pint

Mix. One or two teaspoonfuls every 3 hours.

**Syrup of Cocillana.**

Fluidextract of cocillana...	1½ fl. ounces
Acetic acid .....	1¼ fl. ounces
Glycerin .....	1¼ fl. ounces
Sugar .....	11 av. ounces
Water, enough to make...	16 av. ounces

Dilute the fluidextract with the acetic acid previously mixed with 5 fl. ounces of water, shake well, and filter clear, adding through the filter enough water to make 8 fl. ounces. To the filtrate add the glycerin and sugar, agitate occasionally until the latter is dissolved, strain, and add, if necessary, enough water through the strainer to make 16 fl. ounces.

**Syrup for Consumptives.**

Calcium phosphate.....	5 drams
Distilled water.....	10 drams
Hydrochloric acid.....	6 drams

Mix the phosphate with the water and add sufficient water to dissolve it. Then in the proper manner add:

Balsam of peru.....	2½ drams
Gum arabic.....	2½ drams
Creosote .....	1½ drams
Syrup, enough to make...	1 pint

Mix. The maximum dose of this syrup is a tablespoonful three times a day, but it is advisable to begin on less, say a teaspoonful.

**Consumption Cure.**

Syrup of morphine.....	8 ounces
Chloroform .....	1 ounce
Glycerin .....	7 ounces
Hydrocyanic acid, dilute.	2 drams

Mix the chloroform with the glycerin; add the other ingredients and mix. Dose, a teaspoonful.

**Syrup for Consumptives.**

Heroin hydrochloride.....	6 grains
Glycerin .....	12 ounces
Hydrocyanic acid, diluted.	3 drams
Chloroform .....	1 ounce
Water, enough to make...	1 pint

Mix. One teaspoonful every 3 hours.

**Lemon Juice Cough Syrup.**

Potassium citrate.....	4 drams
Lemon juice.....	1 ounce
Syrup ipecac.....	2 ounces
Simple syrup enough to make .....	1 pint

Mix. One or 2 teaspoonfuls every 2 hours.

**Syrup Honey, Horehound and Tar.**

Oil of tar.....	2 drams
Fluidextract of horehound .....	4 drams
Oil of anise.....	5 drops
Jamaica rum.....	8 ounces
Honey, enough to make..	16 ounces

Mix. Dose: A half to one teaspoonful.

**Tar-Horehound Cough Syrup.**

Horehound .....	2 drams
Irish moss.....	1½ ounces
Ammonium chloride.....	1½ ounces
Boiling water.....	4 pints
Let stand for 12 hours, strain and add	
Oil of tar.....	2 drams
Dissolved in chloroform..	½ ounce
Fluidextract of senna....	2 ounces
Syrup of squill compound	1 pint

Mix. A tablespoonful every 3 hours.

**Syrup of Licorice Root.**

Licorice root, in moderately coarse powder..	4 troy ounces
Diluted alcohol, sufficient quantity.	
Sugar .....	12 troy ounces

Moisten and pack in a conical percolator; macerate for 12 hours, percolate to exhaustion. Place the tincture over a warm bath until reduced to 10 fluid ounces, filter, and then add the sugar, and lastly, sufficient distilled water to make 16 fluid ounces of finished syrup.

**Syrup White Pine Compound.**

White pine bark in coarse powder.....	4 troy ounces
Wild cherry bark in coarse powder.....	4 troy ounces
Spikenard .....	256 grains
Balm gilead buds.....	256 grains
Blood root.....	192 grains
Sassafras bark.....	128 grains
Morphine sulphate.....	12 grains
Chloroform .....	256 grains
Alcohol .....	8 fl. ounces
Water .....	6 fl. ounces
Glycerin .....	2 fl. ounces
Syrup .....	3 pints

Reduce the drugs to No. 30 powder and macerate with the mixture of alcohol and water. When thoroughly moistened allow percolation to proceed and collect the first 14 ounces, which set aside. Continue the percolation until marc is exhausted. Evaporate the final percolate to 2 ounces and mix with the reserved portion. Filter, add the chloroform and morphine and sufficient syrup to bring the total bulk up to 4 pints.

Dose: One or two teaspoonfuls every 3 hours.

**Compound Syrup of Wild Cherry.**

Fluidextract of wild cherry	2½ fl. ounces
Fluidextract of ipecac .....	½ fl. ounce
Fluidextract of blood root..	½ fl. ounce
Morphine sulphate.....	8 grains
Tartar emetic.....	2 grains
Simple syrup, enough to make .....	1 pint

This syrup should be dispensed with a "shake" label attached and with caution as to the dose, on account of the large proportion of morphine. Dose: One teaspoonful every 3 hours.

**Syrup Honey and Tolu.**

Tincture of tolu.....	4 drams
Tincture of opium, camphorated .....	2 ounces
Syrup of squill.....	2 ounces
Honey, enough to make..	1 pint

Dose: One teaspoonful.

**Syrup of Lobelia, Thompsonian.**

Lobelia seed or herb....	½ pound
Water .....	1 gallon
Vinegar .....	½ pint
Boil half an hour, strain, add	
Sugar .....	8 pounds

Mix. Dose, one-half to one tablespoonful every 3 hours.

**Syrup White Pine Expectoant.**

Fluidextract of white pine bark .....	1 ounce
Fluidextract of wild cherry .....	1 ounce
Heroin hydrochloride.....	2 grains
Chloroform .....	2 drams
Syrup of tolu.....	8 ounces
Glycerin, enough to make.	1 pint

Mix. Shake and take ¼ to one tablespoonful every 3 hours.

**Syrupus Pinus Compositus.**

White gum turpentine....	2 drams
Fluidextract of ipecac....	4 fl. drams
Chloroform .....	1 fl. dram
Sugar .....	14 ounces
Water .....	6 fl. ounces
Alcohol .....	3 fl. ounces
Magnesium carbonate, sufficient.	

Dissolve the gum turpentine in the alcohol, triturate with the magnesium carbonate and fluidextract of ipecac, add the sugar and morphine dissolved in the water and filter.

Dose: 1 teaspoonful every 2 hours.

**Syrup of Tar and Wild Cherry.**

Tar .....	3 ounces
Wild cherry in No. 20 powder .....	6 ounces
Sugar .....	2 pounds
Glycerin .....	5 ounces
Boiling water.....	2 pints
Cold water, a sufficient quantity.	

Upon the tar contained in a suitable vessel pour 1 pint of cold water and stir the mixture frequently during 24 hours; then pour off the water and throw it away. Pour the boiling water upon the residue and stir briskly for 15 minutes, then set aside for 36 hours, stirring occasionally. Decant the clear solution and with it thoroughly moisten the wild cherry. Macerate for 24 hours in a closed vessel, then pack it firmly in a cylindrical glass percolator, and gradually pour upon it first the solution of tar and then water until 1 pint of percolate is obtained. Dissolve the sugar in percolate by agitation without heat, add the glycerin and strain. Dose: A tablespoonful.

**Syrup Wild Cherry, Horehound and Tolu.**

Syrup of tolu .....	8 ounces
Syrup of wild cherry.....	3 ounces
Fluidextract of horehound	1 ounce

Mix them. Dose, a teaspoonful.

**Syrup Wild Cherry, Horehound and Tar.**

Syrup of tar.....	6 ounces
Fluidextract of horehound	1 ounce
Syrup of wild cherry....	9 ounces

Mix. One or 2 teaspoonfuls every 3 hours.

**Cough Balsam.**

Syrup of senega.....1½ ounces  
 Tincture of conium.....1 ounce  
 Elixir of fir compound,  
 enough to make.....10 ounces  
 Mix. Dose: One teaspoonful.

**Cough Balsam.**

Cherry-laurel water.....1½ ounces  
 Solution of morphine  
 acetate .....1½ ounces  
 Dilute sulphuric acid.....1½ ounces  
 Tincture of saffron.....1 ounce  
 Orange flower water.....3 ounces  
 Glycerin .....6 ounces  
 Decoction of Iceland moss 14 ounces  
 Simple syrup.....16 ounces  
 Mix. Dose: One teaspoonful.

**Cough Balsam.**

Cherry-laurel water.....1½ ounces  
 Syrup of wild cherry.....3 ounces  
 Solution of morphine  
 acetate .....½ ounce  
 Dilute sulphuric acid.....2 ounces  
 Rose water.....4 ounces  
 Syrup of poppies.....40 ounces  
 Mix. Dose: One teaspoonful, undiluted,  
 when the cough is troublesome.

**Balsam of Aniseed.**

Oil of anise .....1 dram  
 Oil of cinnamon .....10 minims  
 Oil of coriander .....5 minims  
 Compound tincture of ben-  
 zoin .....1 ounce  
 Compound tincture of cam-  
 phor .....3 ounces  
 Vinegar of squill.....6 ounces  
 Syrup .....5 ounces  
 Mucilage of tragacanth,  
 enough to make.....20 ounces

Dissolve the oils in the tinctures and add  
 the mucilage; then mix in the rest of the  
 ingredients. Dose: One or two teaspoonfuls.

**Tripp's Balsam of Anise.**

Oil of anise.....3 ounces  
 Tincture of tolu.....12 ounces  
 Canada balsam.....6 ounces  
 Oil of sweet almond.....4½ ounces

Set the mixture in the sun for four or  
 five days, and shake it three times a day.  
 This is highly recommended for coughs.  
 Twelve or fifteen drops may be taken on  
 sugar three times a day. Shake the vial  
 well before dropping.

**Balsam of Horehound.**

Extracts of horehound and licorice, of each  
 2 ounces; hot water, ½ pint; dissolve, and  
 when cold, add of paregoric, ¼ pint; oxymel  
 of squill, 6 ounces; tincture of benzoin, 2  
 ounces; honey, 10 ounces; and, after thorough  
 admixture, strain through flannel.

**Balsam of Horehound and Tar.**

Fluidextract of horehound 1 ounce  
 Tincture of opium, camphor. 2 ounces  
 Tincture of benzoin.....1 ounce  
 Syrup of tar enough to  
 make .....1 pint

Mix thoroughly. Dose: from 1 teaspoonful  
 to a tablespoonful for cough.

**Golden Honey Balsam.**

Honey .....8 ounces  
 Water .....20 ounces  
 Wine of ipecac.....4 drams  
 Tincture of belladonna...2 drams  
 Oil of aniseed.....30 drops  
 Lum. sugar.....½ ounce

Rub the sugar and oil of aniseed together  
 and add:

Tincture of saffron.....2 drams

To make the tincture of saffron, macerate 5  
 grains saffron in 1 ounce of alcohol.

Dose: one half to one tablespoonful every  
 2 hours.

**Iceland Moss Cough Balsam.**

Solution of morphine acet-  
 ate .....12 drams  
 Dilute sulphuric acid.....12 drams  
 Cherry-laurel water.....12 drams  
 Triple orange flower water 3 ounces  
 Simple syrup.....16 ounces  
 Glycerin .....6 ounces  
 Tincture of saffron.....1 ounce  
 Decoction of Iceland moss 14 ounces

Mix. One tablespoonful, undiluted, for a  
 dose.

**Compound Balsam of Squill.**

Oil of anise.....1 dram  
 Oil of cinnamon .....10 minims  
 Oil of coriander.....5 minims  
 Compound tincture of ben-  
 zoin .....1 ounce  
 Compound tincture of cam-  
 phor .....3 drams  
 Syrup .....5 ounces  
 Honey of squill.....6 ounces  
 Mucilage of tragacanth,  
 enough to make.....20 ounces

Mix the oils with the tinctures and gradu-  
 ally add, under constant agitation, to 5  
 ounces of mucilage of tragacanth. When  
 completely emulsified, add the syrup and  
 honey of squill and enough mucilage to  
 make 20 ounces.

**Balsam Peru Injection (for Tuberculosis).**

Acacia, powdered.....30 grains  
 Balsam of peru.....1 fl. dram  
 Solution of sodium chloride 45 minims  
 Water, distilled, enough to  
 make .....5 fl. drams

The gum is mixed with an equal amount  
 of water, and to this is added the balsam of  
 peru, drop by drop, under constant trituration.  
 After the emulsion has been completely ef-  
 fected, 2 fluid drams of distilled water are  
 added, then the solution of sodium chloride,  
 and finally distilled water, sufficient to com-  
 plete the measure. The emulsion is then neu-  
 tralized with a solution of sodium bicarbon-  
 ate, and in quantities of from 1 to 2 drams  
 placed in sterilized test-tubes, stoppered with  
 cotton and subjected to the action of steam  
 for one hour until completely sterilized.

**Cough Elixir.**

Glycerin .....12 ounces  
 Syrup of raspberry.....2 ounces  
 Chloric ether (1 in 10)....26 drams  
 Extract of carmine.....2 drams  
 Morphine hydrochloride...12 grains  
 Sulphuric acid, diluted...20 drams  
 Hydrocyanic acid, diluted 240 minims  
 Water, enough to make...30 fl. ounces

Mix. One or two teaspoonfuls every 3  
 hours.

**Tonic Cough Elixir.**

Simple syrup.....20 ounces  
 Tincture of wild cherry..18 ounces  
 Solution morphine, B. P. 4 ounces  
 Wine of ipecac.....4 ounces  
 Potassium chlorate.....3 ounces  
 Spirit of chloroform.....6 ounces  
 Water, enough to make...144 ounces

Mix. Macerate, filter.

One or two teaspoonfuls every 3 hours.



**Codeine Jelly for Coughs.**

Gelatin .....	2½ drams
Distilled water.....	9 ounces
Glycerin .....	4½ ounces
Simple syrup.....	2½ ounces

Dissolve the gelatin in the water, glycerin and syrup. To every dram by weight add codeine 1-16 grain, dissolved in dilute phosphoric acid, 4 minims.

**Cough Elixir.**

Tincture of blood root....	2 drams
Essence of bitter almond (1 in 20).....	1 dram
Tincture of wild cherry....	1 ounce
Alcohol, diluted.....	1 ounce
Glycerin .....	1 ounce

Mix.

Morphine acetate.....	3 grains
Tartar emetic.....	2 grains
Water .....	½ ounce

Dissolve by the aid of 5 drops of acetic acid, add the preceding, and make up to 8 ounces with syrup.

Dose: one or two teaspoonfuls every 3 hours.

**Wild Cherry Cough Elixir.**

Morphine acetate.....	3 grains
Tincture of blood root....	2 drams
Wine of antimony.....	3 drams
Wine of ipecac.....	3 drams
Fluidextract of wild cherry	3 ounces
Oil of bitter almond.....	3 minims
Syrup, enough to make....	8 ounces

Dose for an adult, 1 to 2 teaspoonfuls.

**Blessed Thistle Cough Elixir.**

Extracts of blessed thistle and dulcamara, of each, 1 dram; cherry-laurel water, 1 fluid dram; fennel water, 1 fluid ounce. Dose, 1 to 2 teaspoonfuls three or four times a day. It is a most useful remedy in coughs occurring in nervous, hysterical, or irritable patients.

**Magoffin's Diuretic Elixir.**

Oil of juniper.....	7.5 parts
Alcohol .....	60.0 parts
Fluidextract of buchu.....	30.0 parts
Potassium acetate.....	30.0 parts
Distilled water.....	q.s.
Glycerin .....	60.0 parts
Aromatic elixir, enough to make .....	500.0 parts

Dissolve the potassium acetate in as little water as possible. Add the other ingredients and filter the mixture after standing 12 hours.

**Tolu Cough Elixir.**

Heroin hydrochloride.....	4 grains
Tincture of blood root....	½ ounce
Wine of ipecac.....	½ ounce
Syrup of tolu, enough to make .....	1 pint

Mix. One or two teaspoonfuls every 3 hours.

**Essence of Coltsfoot (Imitation).**

Balsam of tolu, 1 ounce; rectified spirit and compound tincture of benzoin, of each 3 ounces; dissolve, and in a few days decant the clear portion. Give from 10 to 20 drops on a lump of sugar in hacking cough.

**Essence of Coltsfoot (Imitation).**

Tincture of tolu, 5 fluid ounces; compound tincture of benzoin, 3 fluid ounces; powdered sugar (quite dry), 1 ounce; hay saffron, 1 dram. Digest a week, with frequent agitation. Give as directed in the preceding.

**Essence of Linseed.**

Chlorodyne .....	½ ounce
Oil of anise.....	20 drops
Tincture of tolu.....	20 drops
Tincture of senega.....	2 ounces
Vinegar of squill.....	3 ounces
Infusion of linseed, enough to make.....	16 ounces

Add the oil of anise in the tincture of tolu, to the vinegar of squill and mix the other ingredients by shaking. Dose, 1 to 2 drams.

**Infusion of Flaxseed.**

Linseed .....	1 ounce
Licorice root.....	½ ounce
Boiling water.....	2 pints

Macerate for 2 or 3 hours near the fire, in a covered vessel; strain, and add lemon juice sufficient to make it agreeable. It may be given as a common drink in catarrh.

**Application for Quinsy.**

Tannin .....	15 grains
Carbolic acid.....	30 minims
Tincture of iodine.....	3 drops
Glycerin .....	5 drams
Water .....	2½ ounces

Mix. Apply three times a day.

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**TOOTHACHE REMEDIES.**

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**Toothache Drops.**

Oil of peppermint.....	3 drams
Rhigolin .....	3 drams
Chloroform .....	3 drams
Camphor .....	2 drams

Mix and apply on a pledget of cotton.

**Toothache Drops.**

Coniine, pure.....	1 drop.
Oil of cloves .....	4 drops
Oil of cinnamon .....	4 drops
Alcohol .....	2 fl. drams

Mix. Put 1 drop on a pledget of absorbent cotton and apply.

**Toothache Drops.**

Tincture of opium .....	1 ounce
Tincture of catechu .....	1 ounce
Tincture of myrrh and cap- sicum .....	1 ounce
Sulphuric ether.....	1 ounce
Oil of cloves.....	½ ounce
Fluidextract of aconite....	½ ounce
Fluidextract of cannabis indica .....	½ ounce
Creosote .....	2 drams

Mix.

**Toothache Drops.**

Pure coniine.....	2 drops
Oil of cinnamon.....	8 drops
Alcohol .....	4 drams

Mix.

**Toothache Drops.**

Oil of cloves.....	30 minims
Sulphuric ether.....	6 drams
Tincture of opium.....	1 dram
Oil of lavender.....	1 dram
Chloroform .....	5 drams
Alcohol .....	1 ounce

Mix.

**Toothache Drops.**

Camphor .....	20 grains
Spirit of peppermint.....	10 minims

Mix.

**Toothache Drops.**

Oil of cloves.....	2 fl. ounces
Oil of peppermint.....	4 fl. drams
Creosote .....	1 fl. ounce
Tincture of aconite.....	½ fl. ounce
Chloroform, enough to make	8 fl. ounces

Mix.

**Toothache Drops.**

Oil of cloves .....	2 drams
Oil of cajuput .....	4 drams
Oil of peppermint .....	2 drams
Chloroform .....	1 ounce
Alcohol, enough to make..	4 ounces

Mix.

**Toothache Drops.**

Creosote .....	5 drams
Alcohol .....	4 drams
Tincture of cochineal.....	1 dram
Oil of peppermint.....	6 drops

Mix.

**Toothache Drops.**

Tincture of opium (crocata) ..	1 ounce
Oil of peppermint.....	1 ounce
Spirit of ether.....	1 ounce

Mix.

**Toothache Drops.**

Oil of cajuput.....	1 ounce
Oil of cloves.....	1 ounce
Chloroform .....	2 ounces

Mix.

**Toothache Drops.**

Tincture of cannabis indica .....	2 ounces
Oil of cloves.....	2 ounces
Chloroform .....	2 ounces

Mix.

**Toothache Drops.**

Aconite liniment.....	3 drams
Chloroform .....	3 drams
Tincture of capsicum.....	1 dram
Tincture of pellitory.....	½ dram
Oil of cloves.....	½ dram
Powdered camphor.....	½ dram

Mix. A few drops to be placed on a pellet of cotton, and applied to the cavity.

**Toothache Drops.**

Camphor .....	1 ounce
Chloral hydrate.....	1 ounce

Triturate together till liquid.

**Toothache Drops.**

Camphor .....	1 ounce
Salol .....	1 ounce
Chloroform .....	1 ounce

Mix and dissolve.

**Toothache Drops.**

Creosote .....	2 drops
Essence of peppermint....	2 drops
Camphorated oil.....	2 drops
Essence of violets.....	5 drops
Cocaine .....	¼ grain
Chloroform .....	1 dram

Mix and dissolve. A few drops on cotton.

**Toothache Drops.**

Chloroform .....	1 ounce
Oil of cloves .....	2 drams
Oil of peppermint .....	½ dram
Oil of spearmint .....	2 drops
Oil of sandalwood.....	15 drops
Oil of cajuput .....	4 drops
Tincture of cassia.....	1½ ounces

Mix these, and add to 1 ounce of a tincture containing 20 grains of catechu in 1 ounce absolute alcohol.

**Toothache Drops.**

Alcohol, 4 drams; camphor, 2 drams; menthol crystals, 1 dram; oil of eucalyptus, 30 drops. Mix and dissolve.

**Toothache Drops.**

Cocaine hydrochloride.....	4 grains
Peppermint water.....	2 drams

Mix and dissolve.

**Toothache Drops.**

Cocaine, alkaloid.....	4 grains
Oil of almond.....	2 drams

Mix and dissolve with gentle heat.

**Toothache Tincture Anodyne.**

Mastic .....	4 drams
Tannin .....	2 drams
Camphor .....	4 drams
Tincture of myrrh.....	4 drams
Chloroform .....	4 drams
Tincture of opium.....	4 drams
Alcohol .....	3 ounces

Mix. Macerate for a week and filter.

This makes a very good toothache anodyne and temporary stopping. Dry the hollow tooth by stuffing the hole with cotton wool. Remove the cotton, and immediately place in the hole a fresh piece of the cotton wool, saturated with the tincture.

**Toothache Tincture.**

Pellitory .....	1 ounce
Ginger .....	1 ounce
Cloves .....	1 ounce
Camphor .....	1 ounce
Tincture of opium.....	4 ounces
Alcohol .....	16 ounces

Mix. Macerate for 8 days and strain.

**Odontalgic Tincture (Toothache Drops).**

Creosote .....	0.5 gram
Oil of cloves .....	1.0 gram
Oil of cajuput .....	1.0 gram
Tincture of opium .....	2.5 grams
Tincture of catechu .....	2.5 grams
Chloroform .....	20.0 grams
Alcohol .....	20.0 grams

Mix.

**Toothache Tincture.**

Opium .....	2 ounces
Mastic .....	1 ounce
Balsam tolu.....	1 dram
Camphor .....	1 ounce
Oil of cloves.....	1 dram
Alcohol .....	16 fl. ounces
Oil of bitter almond.....	8 drops

Mix. Macerate for 8 days and filter.

**Toothache Tincture.**

Creosote .....	2 drams
Chloroform .....	2 drams
Sydenham's laudanum.....	4 drams
Tincture of benzoin.....	1 ounce

Mix.

**Odontalgic Mastic (Toothache Gum).**

Mastic .....	2 ounces
Sandarac .....	2 ounces
Dragon's blood.....	1 dram
Opium .....	10 grains

Pulverize and mix with

Oil of cinnamon.....	1 dram
Oil of cloves.....	1 dram
Alcohol, quantity sufficient.	

Make into soft mass. Insert a little into the cavity of the tooth on cotton wool.

**Toothache Tincture.**

Bruised pellitory.....	½ ounce
Camphor .....	3 drams
Opium .....	1 dram
Oil of cloves.....	½ dram
Alcohol .....	6 ounces

Mix. Digest for 10 days and filter.

**Toothache Tincture.**

Opium .....	2 drams
Myrrh .....	4 drams
Tolu .....	4 drams
Chloroform .....	1 ounce
Creosote .....	1 dram
Oil of peppermint.....	2 drams
Alcohol, enough to make..	1 pint

Mix. Macerate for 8 days and filter.

**Toothache Paste.**

For toothache and for allaying sensitiveness of teeth before filling, 1 part sodium-sozoiodol and two parts of potassium-sozoiodol made into a paste with glycerin is put into the cavity. The soluble sodium salt gradually goes through the points of the roots, while the potassium salt, which is almost insoluble, remains behind, thereby in nearly every case preventing periostitis.

**Toothache Gum.**

Paraffin .....	94 grains	h
Burgundy pitch.....	800 grains	
Oil of cloves.....	½ fl. dram	
Creosote .....	½ fl. dram	

Melt the first two ingredients, and when nearly cool add the rest, stirring well. May be made into small pills or sent out in form of small cones or cylinders.

**Toothache Wax.**

Yellow wax.....	8 ounces
Venice turpentine.....	1 ounce
Pulverized dragon's blood	1 ounce
Pulverized mastic.....	1 ounce
Pulverized opium.....	3 drams
Salicylic acid.....	5 drams
Oil of cloves.....	5 drams
Oil of cajuput.....	1 dram

With a gentle heat, mix into a mass. Stir while cooling and roll out into sticks of the size of a short match. Wrap in paraffined paper and preserve in stoppered bottles.

**Toothache Wax.**

White wax.....	3 ounces
Venice turpentine.....	½ ounce
Mastic, powdered.....	2 drams
Opium, powdered.....	1 dram
Chloral hydrate.....	1 dram

Mix and prepare like the preceding.

**Toothache Collodion.**

Morphine hydrochloride...	3 grains
Oil of peppermint.....	½ dram
Carbolic acid.....	1 dram
Collodion, enough to make	1 ounce

Moisten with this a pledget of cotton and place in the cavity of the tooth.

**Toothache Pellets.**

Cocaine hydrochloride....	16 grains
Powdered opium.....	64 grains
Menthol .....	16 grains
Althaea, powdered.....	48 grains
Mucilage of acacia.....	9 grains

Make into ½ grain pills and keep in well-stoppered vials. Insert 1 pill into the hollow tooth.

**Toothache Remedy.**

Melt white wax or spermaceti, 2 parts, and when melted add carbolic acid crystals, 2 parts; stir well till dissolved. When still liquid immerse thin layers of carbolized absorbent cotton wool and allow them to dry. When required for use, a small piece may be snipped off and slightly warmed, when it can be inserted into the hollow tooth, where it will solidify.

**Teeth, Exposed Nerves.**

Carbolic acid, crystals....	8 grains
Iodoform .....	1 ounce
Kaolin, powdered.....	1 ounce
Oil of peppermint.....	10 drops

Mix and apply to the tooth.

**Tooth Cement.**

Pulverized mastic .....	10 drams
Pulverized sandarac .....	2½ drams
Ether .....	3 ounces

Mix. Set aside until solution is effected; then decant.

**Tooth Cement, Bernoth's.**

Pulverized mastic.....	4 ounces
Absolute alcohol.....	1 ounce
Ether .....	2 ounces
Camphor .....	2 drams
Oil of cloves.....	1 dram
Powdered alum, quantity	sufficient.

Mix and thoroughly knead into a soft mass.

**Tooth Cement Odontalgic.**

Tannic acid.....	1 ounce
Powdered catechu .....	1 ounce
Oil of cloves.....	1 dram
Powdered opium.....	2 drams
Powdered cloves.....	2 drams

Mix thoroughly, and add to 8 ounces gutta-percha softened by heating upon the water bath.

**Tooth Cement, Souberan's.**

Powdered mastic and	
sandarac, of each.....	4 drams
Dragon's blood.....	2 drams
Opium .....	15 grains

Mix with sufficient alcohol to form a stiff paste. A solution of mastic, or of mastic and sandarac, in half the quantity of alcohol, is also used, applied with a little cotton or lint.

**Tooth Cement.**

Sandarac .....	2 ounces
Mastic .....	½ ounce
Amber, in powder.....	1 dram
Ether .....	1 ounce

Mix and apply with cotton.

**Tooth Cement.**

Put into a quart bottle 2 ounces of mastic and 3 ounces of absolute alcohol; apply a gentle heat by a water bath. When dissolved add 9 ounces of dry balsam of tolu, and again heat gently. A piece of cotton dipped in this viscid solution becomes hard when introduced into the teeth, previously dried and cleansed as above.

**Tooth Cement, Ostermaier's.**

Mix 12 parts of dry phosphoric acid with 13 parts of pure and pulverized quicklime. It becomes moist in the mixing, in which state it is introduced into the cavity of the tooth, where it quickly becomes hard.

**Dentists' Amalgam.**

Mercury or quicksilver forms amalgams with many of the metals, several of which are used by dentists. The following are samples:



Pure grain tin.....	2 parts
Cadmium .....	1 part
Beeswax .....	1 part

Melt them together in a porcelain crucible at a heat not exceeding 600° F., and cast the alloy so as to form a small ingot, which, when cold, must be reduced to filings. For use, a small quantity of these filings is formed into an amalgam with quicksilver; the excess of the latter is squeezed out through a piece of chamois leather and the amalgam at once applied to the teeth.

#### Dentists' Amalgam.

Gold .....	1 part
Silver .....	3 parts
Tin .....	2 parts

First melt the gold and silver in a crucible, and at the moment of fusion add the tin. When cold it is pulverized. Equal quantities of the powder and mercury are kneaded together in the palm of the hand to form a paste for filling teeth.

#### Dental Caustic.

Arsenous acid.....	3 parts
Morphine sulphate.....	2 parts
Creosote, a sufficient quantity to make a paste.	

When used, a minute quantity is introduced into the tooth cavity, which has been previously dried with absorbent cotton, and afterwards a small plug of cotton, moistened with collodion, is placed over it.

#### Dental Alloys, Composition.

	A.	B.	C.
Tin .....	91.63	36.78	51.72
Silver .....	3.82	48.32	34.35
Copper .....	4.40		
Gold .....		14.72	
Mercury .....			8.52

Each alloy (A., B., or C.) is prepared in a similar manner by melting the metals together in a platinum crucible.

#### White Dental Stopping.

Zinc oxide.....	200 parts
Silica, fine powder.....	8 parts
Borax .....	4 parts
Glass .....	5 parts

Rub together and sift. When required, make into a soft paste with a saturated solution of zinc chloride.

#### Mouth Wash Anti-Caries.

Tannin .....	8 drams
Potassium iodide .....	1 dram
Tincture of iodine.....	5 drams
Tincture of myrrh.....	5 drams
Rose water.....	25 ounces

A tablespoonful may be mixed with a glass of tepid water for use.

#### Mouth Wash to Harden the Gums.

Myrrh .....	1 ounce
Camphor .....	1 ounce
Peruvian bark.....	1 ounce

Digest for a few days in one pint of alcohol Strain through a cloth and filter. Use a teaspoonful daily for rinsing the mouth.

#### Mouth Wash to Harden the Gums.

Tincture of myrrh.....	4 ounces
Tincture of benzoin.....	1 ounce
Camphor .....	1 ounce
Alcohol, enough to make..	1 pint

Mix and dissolve. A teaspoonful to a cup of warm water.

#### Gum Hardener.

Tincture of myrrh.....	1 ounce
Tannin .....	15 grains
Cocaine, alkaloid.....	5 grains
Mix and dissolve. Put a few drops on the finger and rub the gums.	

#### Tooth Extraction, Painless.

Cocaine hydrochloride.....	10 grains
Morphine sulphate.....	10 grains
Chloral hydrate.....	10 grains
Carbolic acid.....	10 grains
Rose water.....	10 fl. drams
Mix. Dissolve and inject with a hypodermic syringe into the gums.	

#### Hemorrhage From Tooth Extraction.

Chloroform .....	1 dram
Tannic acid.....	30 grains
Menthol .....	30 grains
Tincture of krameria.....	1 fl. ounce
Distilled water.....	1 pint
Mix. Wash the mouth with the solution.	

#### Hemorrhage From Tooth Extraction.

Tannic acid.....	30 grains
Cocaine hydrochloride.....	10 grains
Peppermint water.....	8 ounces
Mix. Use as a mouth wash.	

#### Teething, Painful.

Cocaine is recommended and the following preparation rubbed on the gums several times a day is said to be effective: 1½ grains cocaine hydrochloride, 2 fluid ounces syrup, 20 drops tincture of conium.

#### Teething Mixture, Besnier's.

Potassium bromide.....	10 grains
Cocaine hydrochloride.....	10 grains
Glycerin .....	4 ounces
Water .....	4 ounces
Mix. Apply frequently to the swollen and painful gums with the finger or with a camel-hair pencil.	

#### Syrup de Dentition.

Glycerin .....	1 ounce
Chloroform .....	10 drops
Tincture of Spanish saffron	
(1:8 .....	½ dram
Honey .....	½ ounce
Mix.	

## LINIMENTS.

#### Liniment.

Soap liniment.....	1½ ounces
Tincture of capsicum.....	½ ounce
Ammonia water.....	½ ounce
Alcohol .....	½ ounce
Mix.	

#### Liniment.

Oil of cloves.....	1 dram
Oil of sassafras.....	2 ounces
Spirit of camphor, enough to make.....	4 ounces
Mix.	

#### Liniment.

Tincture of opium.....	4 drams
Tincture of aconite.....	4 drams
Stronger water of ammonia	4 drams
Chloroform liniment, enough to make.....	8 ounces
Mix.	

#### Liniment.

Stronger water ammonia..	4 drams
Oil of cajuput.....	1 dram
Tincture of belladonna...	1 ounce
Camphor liniment, enough to make.....	6 ounces
Mix.	

**Liniment.**

Oil of cajuput.....	1 ounce
Oil of sassafras.....	1 ounce
Tincture of aconite.....	2 ounces
Chloroform liniment, enough to make.....	1 pint

Mix.

**Liniment.**

Chloroform .....	1 ounce
Tincture of aconite.....	1 ounce
Oil of peppermint.....	½ ounce
Alcohol, enough to make..	1 pint

Mix.

**Liniment.**

Spirit turpentine.....	1 ounce
Camphorated oil.....	1 ounce
Tincture of capsicum, ethereal .....	1 ounce
Spirit of ammonia.....	1 ounce

Mix.

**Liniment.**

Spirit of camphor .....	6 drams
Spirit of ammonia .....	6 drams
Oil of sassafras .....	3 drams
Chloroform .....	3 drams
Oil of cloves .....	1½ drams
Oil of turpentine .....	3 drams
Alcohol, enough to make..	4 ounces

Mix.

**Liniment, "A. B. C." (Improved).**

Liniment of aconite.....	5 fl. ounces
Liniment of belladonna.....	5 fl. ounces
Chloroform .....	2½ fl. ounces
Camphor .....	4 drams
Glycerin, enough to make.	1 pint

Mix.

**Liniment Anodyne.**

Tincture of belladonna....	2 drams
Soap liniment.....	3 ounces

Mix.

**Liniment Army Medical Wagon.**

Ammonia water, oil of turpentine, olive oil,  
of each equal parts.

Mix.

**Anodyne Liniment.**

Tincture of belladonna ...	4 ounces
Tincture of aconite .....	4 ounces
Spirit of camphor.....	8 ounces

Mix.

**Liniment Chilblain.**

Menthol .....	80 grains
Chloroform .....	1 fl. ounce
Liniment of camphor .....	1 fl. ounce
Liniment of belladonna, enough to make.....	8 fl. ounces

Mix and apply.

**Liniment Chilblain.**

Chloroform .....	2 fl. drams
Liniment of belladonna..	1 fl. ounce
Oil of cajuput.....	2 fl. drams
Compound tincture of ben- zoïn .....	4 fl. drams
Strong tincture of cap- sicum .....	2 fl. drams
Soap liniment, enough to make.....	6 fl. ounces

Mix and apply.

**Liniment Ammonium Iodide.**

Iodine .....	15 grains
Alcohol .....	8 ounces
Camphor .....	2 drams
Oil of lavender .....	1 dram
Oil of rosemary .....	1 dram
Ammonia water.....	1 ounce

Mix.

**Liniment Arnica (Glycerole of Arnica).**

Arnica flowers, bruised...	4 ounces
Glycerin .....	1 pound

Digest at a moderate temperature on a water  
bath, express and strain.

**Liniment, Camphorated Ammoniacal.**

Soap liniment.....	3 ounces
Spirit of camphor.....	1 ounce
Ammonia water.....	2 ounces

Mix.

**Liniment, Household.**

Soap liniment.....	3 ounces
Ammonia water.....	½ ounce
Laudanum .....	½ ounce

Mix.

**Arnica Liniment.**

Arnica, bruised.....	1 ounce
Glycerin .....	8 ounces
Alcohol .....	8 ounces

Mix the alcohol and glycerin and digest  
the arnica in it for 3 days. Then express  
and add alcohol to make 1 pint.

**Liniment, Lime Water and Opium.**

Lime water, linseed oil, laudanum, of each,  
equal parts. An embrocation to allay pain.

**Liniment, Magnetic.**

Oil of turpentine.....	9 ounces
Tincture of capsicum.....	12 ounces
Spirit of camphor.....	96 ounces
Stronger ammonia water..	9 ounces
Alcohol .....	18 ounces
Oil of sassafras.....	½ ounce

Mix.

**Liniment, Mustard.**

Oil of mustard.....	2 drams
Chloroform .....	2 drams
Spirit turpentine.....	2 drams
Alcohol .....	1 pint

Mix.

**Liniment, Mustard.**

Oil of mustard.....	3 drams
Chloroform .....	1 ounce
Menthol .....	½ ounce
Alcohol, enough to make..	1 pint

Mix.

**Liniment, Mustard.**

Oil of mustard.....	2 drams
Tincture of aconite.....	1 ounce
Chloroform .....	1 ounce
Alcohol, enough to make..	1 pint

Mix.

**Liniment, Pellitory.**

Tincture of pellitory.....	6 fl. drams
Camphorated oil.....	½ fl. dram
Ammonia water.....	½ fl. dram

Mix. For chilblains and rheumatic pains.

**Liniment, Popular.**

Tincture of capsicum .....	2 ounces
Tincture of myrrh .....	2 ounces
Tincture of opium .....	2 ounces
Tincture of guaiac .....	1 ounce
Spirit of camphor, enough to make.....	1 pint

Mix.

**Liniment Potassium Iodide.**

Common soap.....	14 drams
Alcohol .....	8½ ounces
Potassium iodide.....	1½ ounces
Water .....	1½ ounces
Oil of garden lavender...	½ dram

Dissolve the soap in the alcohol by means  
of a gentle heat, and filter if not perfectly  
clear, then add the oil. Dissolve the potas-  
sium iodide in the water and mix both solu-  
tions.

**Liniment, Rheumatic.**

Oil of wintergreen..... ½ ounce  
 Soap liniment..... 1½ ounces  
 Mix. Apply to the painful parts.

**Liniment, Rheumatic.**

Belladonna leaves..... 2 ounces  
 Aconite root..... 2 ounces  
 Hyoscyamus leaves..... 2 ounces  
 Alcohol ..... 10 ounces  
 Oil of sassafras ..... ½ ounce  
 Oil of cloves ..... 1 dram  
 Oil of peppermint ..... 1 dram  
 Water ..... 5 ounces

Mix 5 ounces of alcohol with the water. Put the drugs in fine powder in a percolator and percolate 10 ounces. Dissolve the oils in the remainder of the alcohol and mix with the percolate.

**Liniment, Rheumatic.**

Tincture of aconite..... 2 drams  
 Oil of turpentine..... 1 ounce  
 Tincture of opium..... 1 ounce  
 Soap liniment, enough to make ..... 6 ounces

Mix.

**Liniment, Red.**

Spirit of camphor..... 2 ounces  
 Oil of origanum ..... 2 drams  
 Oil of sassafras ..... 2 drams  
 Oil of turpentine ..... ½ ounce

Mix.

**Liniment, Rheumatic.**

Menthol ..... ½ ounce  
 Cocaine alkaloid..... 1 dram  
 Chloroform ..... 2 ounces  
 Camphorated oil, enough to make..... 1 pint

Dissolve the menthol and cocaine in the chloroform and add the oil.

**Liniment, Rheumatic.**

Oil of cloves ..... 2 drams  
 Oil of sassafras ..... 1 ounce  
 Methyl salicylate..... 4 ounces  
 Olive oil, enough to make. 1 pint

Mix.

**Liniment, Rheumatic.**

Methyl salicylate,  
 Camphorated oil, of each. 4 ounces

Mix.

**Liniment, Rheumatic.**

Methyl salicylate..... 4 ounces  
 Menthol ..... 1 ounce  
 Olive oil, enough to make. 1 pint

Mix and dissolve.

**Liniment, Rheumatic.**

Methyl salicylate..... 2 ounces  
 Chloroform ..... 1 ounce  
 Oil of peppermint ..... 1 ounce  
 Oil of sassafras ..... 1 ounce  
 Alcohol, enough to make.. 1 pint

Mix.

**Analgesic Paste, B.P.C.**

Methyl salicylate, by weight ..... 50.00 grams  
 Camphor ..... 10.00 grams  
 Stearic acid..... 10.00 grams  
 Sodium carbonate..... 1.20 grams  
 Glycerin ..... 1.20 grams  
 Distilled water, a sufficient quantity.

Melt the stearic acid on a water bath, add the sodium carbonate dissolved in the glycerin and 4 grams of hot distilled water, stir until effervescence ceases, heat until a clear liquid is obtained, and make up the weight

to 40 grams with warm distilled water; pour the mixture into a wide-mouthed bottle containing the methyl salicylate, in which the menthol has been dissolved, shake until a creamy product is obtained and transfer to collapsible tubes.

**Rheumatic Balm.**

Methyl salicylate ..... 2½ ounces  
 Menthol ..... ½ ounce  
 Eucalyptol ..... ½ ounce  
 Oil of cajuput..... ½ ounce  
 Anhydrous wool fat..... 5 ounces  
 White paraffin ointment... 16 ounces

Mix.

**Liniment, Sprain.**

Oil of turpentine..... 2 ounces  
 Acetic acid..... 2 ounces  
 Oil of lavender..... 1 dram  
 Yolk of egg ..... 1 dram  
 Water, enough to make... 16 ounces

Mix. Apply 2 or 3 times daily.

**Inseparable White Liniment.**

Oil of turpentine..... 6 ounces  
 Essential oil of camphor.. 2 ounces  
 Nut oil (peanut oil)..... 4 ounces  
 Eggs ..... 2  
 Acetic acid..... 2 ounces  
 Water, enough to make... 20 ounces

Mix the eggs with the oil of turpentine in a mortar, strain into the bottle, add the other ingredients, and shake till the emulsion is formed.

**Liniment for Scabies.**

Arsenous acid..... 1 grain  
 Potassium carbonate..... 15 grains  
 Spirit of soap..... 3 drams  
 Water ..... 3 ounces

Mix and dissolve.

**Liniment for Sprains.**

Tincture of aconite ..... 1 ounce  
 Tincture of opium ..... 1 ounce  
 Camphor ..... 2 ounces  
 Soap liniment, enough to make ..... 1 pint

Mix and dissolve.

**Liniment, Sulphur.**

Sulphur, precipitated,  
 Almond oil,  
 Lime water.

Triturate the sulphur with the oil, and add lime water in slight excess; shake it thoroughly together, and dispense it in a wide-mouthed vial.

**Liniment, Tannic Acid.**

Tannic acid..... 1 ounce  
 Glycerin ..... 10 ounces

Mix, make a solution and dilute as desired.

**Liniment, Turpentine.**

Resin ointment, 4 ounces; camphor, 4 drams; dissolve by a gentle heat, and stir in oil of turpentine, 5 fluid ounces.

**Liniment of Calamine, Compound**

Prepared calamine..... 2 ounces  
 Zinc oxide..... 1 ounce  
 Zinc oleate..... ½ ounce  
 Wool fat..... ½ ounce  
 Soft paraffin, white..... 4 ounces

Liquid paraffin, enough to make ..... 20 fl. ounces

Rub the prepared calamine and zinc oxide to a smooth paste with some of the liquid



paraffin. Melt the zinc oleate, wool fat, and soft paraffin together at a low temperature and mix with the remainder of the liquid paraffin. Incorporate this mixture with the calamine and zinc oxide paste. Like liniment of calamine, this preparation furnishes a soothing application in eczema and irritable conditions of the skin, and may be used in place of carron oil for burns.

#### Liniment, Turpentine.

Oil of turpentine, 16; camphor, 1; soft soap, 2; dissolve the camphor in the turpentine, then add the soap, and rub till thoroughly mixed.

#### Liniment, Turpentine.

Oil of turpentine, 5 fluid ounces; resin ointment, 8 ounces; mix by a gentle heat.

#### Liniment, Iodine With Carbolic Acid.

Compound tincture of iodine .....	1 dram
Liquid carbolic acid.....	10 drops
Glycerin .....	1 ounce
Distilled water.....	5 ounces

Mix.

#### Lightning Oil.

Tincture of opium.....	1 ounce
Oil of sassafras.....	1 ounce
Tincture of colchicum root .....	1 ounce
Tincture of myrrh .....	1 ounce
Tincture of capsicum .....	1 ounce
Tincture of valerian .....	1 ounce
Sulphuric ether.....	1 ounce
Chloroform .....	1 ounce
Water of ammonia.....	2 ounces
Castor oil.....	2 ounces
Spirit of camphor.....	2 ounces
Oil of cedar.....	2 ounces

Mix and add red saunders enough to color.

#### Instantaneous Liniment.

Alcohol .....	$\frac{1}{2}$ gallon
Oil of wormwood .....	1 dram
Oil of sassafras .....	2 drams
Oil of cinnamon .....	2 drams
Chloroform .....	$\frac{1}{2}$ ounce
Alcohol .....	4 ounces

Mix. Beneficial for sprains and stiffness of the joints.

#### Instantaneous Oil.

Oil of wormwood .....	1 dram
Oil of sassafras .....	2 drams
Oil of cinnamon .....	2 drams
Chloroform .....	4 drams
Olive oil.....	4 ounces

Mix. For sprains and stiffness.

#### One Minute Lightning Drops.

Oil of mustard, volatile...	45 minims
Chloroform .....	2 drams
Oil of turpentine.....	30 minims
Alcohol .....	1 fl. ounce

Mix.

#### Liniment, Eagan's.

Menthol .....	4 drams
Dissolved in	
Alcohol .....	1 pint
Add	
Glycerin .....	1 ounce
Oil of cloves .....	1 dram
Oil of cinnamon .....	1 dram

For sick headache and neuralgia. Apply with a brush.

#### Essence of Mustard, Whitehead's.

Oil of turpentine.....	4 fl. ounces
Camphor .....	2 drams
Oil of rosemary .....	2 drops
Oil of mustard, volatile...	2 drops

Infuse together and color with a little tincture of turmeric.

#### White Liniment.

Ammonium carbonate.....	19 parts
Camphor .....	20 parts
Oil of turpentine .....	21 parts
Oil of origanum .....	20 parts
Castile soap.....	19 parts
Water, to make (by weight) .....	300 parts

Mix.

#### White Liniment.

White castile soap, in shavings .....	13 drams
Ammonium carbonate.....	2 ounces
Ammonia water.....	4 ounces
Water .....	60 ounces
Camphor .....	2 ounces
Alcohol .....	3 ounces
Oil of turpentine.....	13 ounces

Dissolve the soap in 3 pints of water, and the ammonium carbonate in the remaining 12 ounces of water and the ammonia water. Mix these two solutions. Then reduce the camphor to a thin paste with the alcohol and in small portions add to the soap mixture, agitating briskly after each addition. Then add the oil of turpentine gradually, thoroughly incorporating after each addition and continuing until an emulsion-like mixture results.

#### Pain Expeller.

Tincture of capsicum .....	25 drams
Tincture of camphor .....	5 drams
Ammonia water.....	10 drams
Alcohol .....	10 drams
Soap liniment.....	10 drams

Mix.

#### Mustard Sponge.

Mix the mustard in a basin with water until the mass is smooth and of even consistency. Then take the soft mass up with a clean sponge, lay the sponge in the center of a white handkerchief, tie up the corners neatly, and apply the smooth convex surface to the skin. This mustard sponge, warmed again by the fire and slightly moistened, can be employed three or four times, is good for several hours, and saves the trouble of making a new poultice. The sponge can be easily washed in warm water.

## BITTERS, TONICS, ETC.

#### Bitters.

Grind to a coarse powder 5 ounces polypody, 6 ounces calamus root, 8 ounces orris root,  $2\frac{3}{4}$  ounces coriander seed, 1 ounce centaury, 3 ounces orange peel, 2 ounces German chamomile flowers; then macerate with  $4\frac{1}{2}$  gallons of 95 per cent alcohol, and add  $5\frac{1}{4}$  gallons of water and 1 ounce of sugar. Filter, and color brown.

#### Bitters.

Macerate  $2\frac{3}{4}$  pounds ground dried small orange berries,  $\frac{1}{4}$  pound ground dried orange peel, 2 ounces ground dried calamus root, 2 ounces ground dried pimpinella root, 1 ounce ground or cut hops, for 14 days, with 10 gallons of 45 per cent alcohol; press, and add  $4\frac{1}{2}$  pints of brown sugar syrup. Filter. The color should be dark brown.

#### Bitters.

Grind to a powder 2 ounces agaric, 5 ounces cinnamon, 4 ounces cassia buds,  $\frac{1}{2}$  ounce grains of paradise, 3 ounces quassia wood,  $\frac{3}{4}$  ounce cardamom seeds, 3 ounces gentian root, 3 ounces orange berries dried,  $1\frac{1}{2}$  ounces orange peel; macerate with  $4\frac{1}{2}$  gallons of 95

per cent alcohol, mixed with  $5\frac{3}{4}$  gallons of water, and  $2\frac{1}{4}$  ounces of acetic ether. Color the liquid brown.

#### Bitters.

Grind to a coarse powder 4 ounces cinchona or chirata bark, 10 ounces sweet orange peel, 1 ounce lemon peel, 1 ounce bitter orange peel, 1 dram cinnamon, 1 dram nutmeg, 1 dram cloves, and 30 cayenne seeds. Infuse for about 10 days in 4 gallons of 65 per cent alcohol, and then filter off into bottles.

#### Bitters.

Tincture of gentian comp.	$\frac{1}{2}$ ounce
Tincture of angostura	1 ounce
Tincture of cinchona comp.	1 ounce
Elixir simple, enough to make	1 pint

Mix.

#### French Bitters.

A splendid French bitter is made from  $1\frac{1}{2}$  pounds each red cinchona bark, bitter orange peel and sweet orange peel; 2 ounces calamus root, 4 ounces cardamom seeds,  $1\frac{1}{2}$  ounces each cinnamon, cloves and nutmeg, 4 ounces caraway seeds, and 3 pounds wild cherry bark. Pound all these ingredients to a coarse powder and steep for 15 days in 45 gallons alcohol (57 per cent), stirring occasionally. Then rack it off and mix sufficient caramel (burnt sugar) to make it a dark red; add 15 pounds of white sugar dissolved in 15 gallons of water. Let the whole settle, then filter.

#### Bitters.

Alcohol (57 per cent), 90 gallons; red cinchona bark,  $\frac{3}{4}$  pounds; calisaya bark,  $\frac{3}{4}$  pounds; calamus root,  $1\frac{1}{2}$  pounds; orange peel,  $\frac{1}{4}$  pounds; cinnamon,  $\frac{3}{4}$  ounces; cloves,  $\frac{3}{4}$  ounces; nutmeg,  $\frac{3}{4}$  ounces; cassia buds, 2 ounces; red saunders,  $6\frac{1}{2}$  pounds. First mash all the ingredients, put them in the alcohol, and let them infuse for 14 days, stirring the mixture well twice every day. Rack off and color with 11 pints of brandy coloring, to get a dark red tint. Stir a quarter of an hour. Dissolve 30 pounds of white sugar in 30 gallons of water, add, and again stir for half an hour. Let the mixture rest for four or five days, and when bright, bottle. If the saunders is not used, the color will be a bright amber. Compounded according to the above directions this will yield about 120 gallons, containing about 36 per cent of alcohol.

#### Bitters, Alternative and Tonic.

Fluidextract of hops	16 fl. ounces
Fluidextract of red cinchona	8 fl. ounces
Fluidextract of sarsaparilla	6 fl. ounces
Fluidextract of hydrastis	6 fl. ounces
Fluidextract of podophyllum	4 fl. ounces
Oil of wintergreen	6 fl. drams
Oil of sassafras	3 fl. drams
Oil of peppermint	2 fl. drams
Oil of lemon	2 fl. drams
Sugar	6 pounds
Alcohol	2 gallons
Water, enough to make	12 gallons

Mix all, let stand for 8 days, stirring often and water through talc powder.

#### Tonic Bitters.

Gentian	1 ounce
Cardamom	1 ounce
Anise	2 ounces
Angostura bark	2 ounces
Cinchona bark	$\frac{1}{2}$ ounce
Red saunders	1 ounce
Sugar	10 pounds
Alcohol	2 pints
Water, enough to make	1 gallon

Reduce the drugs to coarse powder, put in a percolator, and with a mixture of 2 pints of alcohol and 5 of water, percolate 7 pints of liquid. Dissolve the sugar in the percolate.

#### Bitters, Angostura.

Take 4 ounces gentian root, 10 ounces each of calisaya bark, Canada snake-root, Virginia snake-root, licorice root, yellow bark, allspice, dandelion root and Angostura bark, 6 ounces cardamom seeds, 4 ounces each of balsam of tolu, rhubarb, and galangal, 1 pound of orange peel, 1 pound of alkanet root,  $1\frac{1}{2}$  ounces caraway seed,  $1\frac{1}{2}$  ounces cinnamon,  $1\frac{1}{2}$  ounces of cloves, 2 ounces of nutmeg, coriander seed, catechu and wormwood, 1 ounce of mace,  $1\frac{1}{4}$  pounds of red saunders, and 8 ounces of turmeric. Pound all separately and mix together, macerating for 15 days in 50 gallons of 57 per cent alcohol. Before filtering, add 30 pounds of honey.

#### Bitters, Crown Bark.

Tincture of cinchona comp.	1 pound
Tincture of nux vomica	$1\frac{1}{2}$ ounces
Tincture of cardamom comp.	$1\frac{1}{2}$ drams
Aromatic spirit of ammonia	6 drams
Simple syrup	1 ounce
Water, enough to make	1 ounce

Mix.

#### Bitters, Herb.

Tamarack bark	6 ounces
Juniper berries	6 ounces
Prickly ash bark	4 ounces
Wild cherry bark	3 ounces
Senega	3 ounces
Tansy	1 ounce
Whisky, or diluted alcohol	8 pints
Molasses	4 pints
Water, sufficient.	

Exhaust the drugs, coarsely powdered, by percolation with the whisky, and then with enough water to complete twenty pints of percolate. To this add the molasses, and filter.

#### Bitters, Hop.

Orange peel	4 pounds
Sweet flag	2 pounds
Saxifrage	2 pounds
Hops	1 pound
Sugar	8 pounds
Alcohol	32 pints
Water	48 pints

Mix alcohol and water. Reduce the drugs to a coarse powder and macerate in the liquid for 8 days. Strain, add the sugar and filter, adding enough alcohol and water to obtain 8 gallons.

#### Bitters, Hop.

Hops	2 ounces
Dandelion	2 ounces
Gentian	2 ounces
Chamomile	2 ounces
Stillingia	2 ounces
Orange peel	2 ounces
Alcohol	77 fl. ounces
Water	77 fl. ounces
Syrup, simple	12 fl. ounces

Exhaust the solids with the alcohol and water, and add the syrup.

#### Bitters, Orange.

Seville orange peel, 1 pound; lemon peel,  $\frac{1}{2}$  pound; gentian root,  $\frac{1}{2}$  pound; ginger,  $\frac{1}{2}$  pound. Bruise separately and set in an open cask or large crock, and add 3 gallons of water. Macerate for 3 or 4 days, and then add 1 gallon of syrup and 1 quart of alcohol.

Filter off and press the marc. The addition of a teaspoonful each of broken cinnamon and cloves adds much to the stomachic qualities and taste of the bitters. Twice the quantity of quassia may be used instead of the gentian, or half of each in proportion.

#### Bitters, Peruvian Bark.

Grind to a coarse powder 1 pound Peruvian bark,  $\frac{1}{4}$  pound cardamom seeds,  $\frac{1}{4}$  pound nutmeg,  $\frac{1}{4}$  pound grains of paradise,  $\frac{1}{2}$  pound cinnamon,  $\frac{1}{4}$  pound cloves,  $\frac{1}{4}$  pound ginger,  $\frac{1}{4}$  pound orange peel,  $\frac{1}{8}$  pound lemon peel,  $\frac{1}{4}$  pound gentian root; macerate them in  $4\frac{3}{4}$  gallons of 95 per cent alcohol, and add, before filtering, a syrup made with  $4\frac{1}{2}$  gallons of water and 12 pounds of sugar.

#### Bitters, Peruvian Bark.

Take of red Peruvian bark, 8 ounces; orange peel, 8 ounces;  $1\frac{1}{2}$  drams each of cinnamon, cloves and nutmeg; and 75 cayenne pepper seeds. Infuse them, well bruised, in 8 gallons of alcohol (57 per cent) for 15 or 20 days, stirring every day. Draw off and filter.

#### Bitters, Spring.

Aloes .....	6 ounces
Sassafras .....	8 ounces
Hops .....	2 ounces
Gentian .....	4 ounces
Chamomile .....	2 ounces
Acetic acid, U. S. P. ....	1 ounce
Alcohol .....	1 quart
Water, sufficient quantity.	1 gallon

Mix acid and alcohol with 2 quarts of water. Macerate 24 hours, then percolate, adding enough hot water to make 1 gallon.

#### Bitters, Stomach Vienna.

Dissolve:

Oil of orange peel .....	40 drops
Oil of balm .....	40 drops
Oil of angelica .....	40 drops
Oil of marjoram .....	24 drops
Oil of wormwood .....	24 drops
Oil of cinnamon .....	24 drops
Oil of coriander .....	24 drops
Oil of mace .....	24 drops
Cognac essence.....	$\frac{1}{2}$ fl. ounce
Alcohol, 90 per cent.....	$1\frac{3}{4}$ gallons

Sweeten the solution with  $7\frac{3}{4}$  pounds of sugar dissolved in  $2\frac{1}{2}$  quarts of water; color red, and filter.

#### Bitters, Orange.

Macerate 6 pounds orange peel for 24 hours with one gallon of water, and then cut the yellow peel from off the white; or purchase the peel cut very thin in the first instance, chop it fine or run it through a coarse mincer, and then macerate with  $4\frac{3}{4}$  gallons of 95 per cent alcohol for two weeks, adding afterwards a syrup made of 16 pounds of sugar dissolved in  $4\frac{1}{4}$  gallons of water. Filter through flannel.

#### Bitters, Stomach.

Comminute:

Speedwell .....	$\frac{1}{2}$ ounce
Mint .....	$\frac{1}{2}$ ounce
Balm .....	$\frac{1}{2}$ ounce
Wormwood .....	$\frac{1}{2}$ ounce
Arum root .....	$\frac{1}{2}$ ounce
Zedoary .....	$\frac{1}{2}$ ounce
Calamus root .....	$\frac{1}{2}$ ounce
Small pomegranates.....	$\frac{1}{2}$ ounce
Caraway seed.....	$\frac{1}{2}$ ounce
Cinnamon .....	$\frac{1}{2}$ ounce

Pour over them  $1\frac{1}{4}$  quarts of good whisky and macerate for 14 days in a warm place, frequently shaking. Then press the solution out, filter and bottle.

#### Bitters, Stomach.

Rye whisky.....	1 gallon
Orange peel, ground.....	6 ounces
Gentian root, ground.....	4 ounces
Roman chamomile flowers.	2 ounces

Macerate for 7 days, occasionally shaking the mixture; then express, and filter through paper.

#### Bitters, Stomach.

Oil of orange peel.....	60 drops
Oil of calamus .....	40 drops
Oil of cardamom .....	40 drops
Oil of angelica .....	40 drops
Oil of wormwood .....	40 drops
Oil of ginger .....	40 drops
Oil of marjoram .....	40 drops
Cognac essence.....	2 fl. drams
Alcohol, 90 per cent.....	$1\frac{3}{4}$ gallons

Sweeten the solution with  $5\frac{1}{2}$  pounds of sugar, dissolved in  $1\frac{1}{2}$  gallons of water, and filter.

#### Bitters, Stomach.

Oil of orange peel .....	40 drops
Oil of wormwood .....	40 drops
Oil of mint .....	40 drops
Oil of calamus .....	40 drops
Oil of marjoram .....	20 drops
Oil of cinnamon .....	20 drops
Oil of cardamom .....	20 drops
Oil of cloves .....	20 drops
Cognac essence.....	$1\frac{1}{4}$ fl. drams
Alcohol, 90 per cent.....	$1\frac{3}{4}$ gallons

Sweeten the solution with  $\frac{1}{2}$  pounds of sugar, dissolved in  $1\frac{1}{2}$  gallons of water, color the solution brown and filter.

#### Bitters, Stomach.

Oil of orange .....	60 drops
Oil of fennel .....	30 drops
Oil of anise .....	30 drops
Oil of wormwood .....	20 drops
Oil of cloves .....	10 drops
Oil of cinnamon .....	10 drops
Tincture of cinchona comp.	5 ounces
Alcohol .....	1 gallon
Sugar .....	15 pounds
Water, enough to make...	5 gallons

Dissolve the oils in the alcohol and the sugar in 3 gallons of water; mix together and add the tincture. Let stand 8 days, stirring often, filter and add water to obtain 5 gallons. This bitters has a very light color. If a deeper color is desired, caramel (1 dram to 1 ounce) may be added.

#### Bitters, Stomach.

Comminute:

Calamus .....	2 ounces
Anise seed.....	2 ounces
Caraway seed.....	2 ounces
Fennel .....	2 ounces
Ginger .....	$1\frac{1}{2}$ ounces
Cinnamon .....	$1\frac{1}{2}$ ounces
Mace .....	$\frac{1}{2}$ ounce
Cloves .....	1 ounce
Lemon peel.....	$4\frac{3}{4}$ ounces
Galangal .....	1 ounce
Zedoary .....	1 ounce
Cubeb .....	1 ounce
Pepper .....	$\frac{1}{2}$ ounce
Sassafras bark.....	$\frac{1}{4}$ ounce
Rose leaves.....	$1\frac{1}{2}$ ounces
Myrrh .....	$1\frac{1}{2}$ ounces
Lavender blossoms.....	$1\frac{1}{2}$ ounces
Orris root.....	2 ounces

Pour 2 gallons of whisky and  $1\frac{3}{4}$  pints of water over the ingredients, and macerate for eight days; then press out, filter the liquid, and add some common salt and  $4\frac{1}{2}$  pounds of crushed sugar.



**Bitters, Tonic.**

St. Croix rum.....	1 gallon
Bitter orange peel, ground.....	4 ounces
Gentian root, ground.....	3 ounces
Nutmeg, ground.....	$\frac{1}{4}$ ounce
Cloves, ground.....	$\frac{1}{2}$ ounce
Syrup .....	6 ounces
Cinnamon, ground.....	$\frac{1}{2}$ ounce

Macerate seven days; express and filter.

**Bitters, Union.**

Ground gentian .....	4 ounces
Ground Peruvian bark.....	2 ounces
Ground Roman chamomile flowers .....	1 ounce
Ground quassia .....	$\frac{1}{2}$ ounce
Ground orange peel.....	$\frac{1}{2}$ ounce
Alcohol, 50 per cent.....	1 gallon

Macerate for 14 days; express, and filter.

**Bitters, Tonic.**

Bitter orange peel.....	2 ounces
Gentian .....	1 ounce
Calisaya bark.....	1 ounce
German chamomile.....	1 ounce
Mace .....	$\frac{1}{4}$ ounce
Nutmeg .....	$\frac{1}{4}$ ounce
Cloves .....	$\frac{1}{4}$ ounce
Anise seed.....	1 ounce
Elixir simple.....	1 gallon

Reduce to powder and macerate in the elixir for 7 days, shaking often. Filter.

**Bitters, Wine.**

Golden seal root, powdered .....	1 dram
Tulip tree bark.....	1 dram
Bitter root.....	1 dram
Prickly ash berries.....	30 grains
Sassafras .....	30 grains
Capicum .....	30 grains
Sherry wine, sufficient to make .....	3 pints

Exhaust the drugs by maceration or percolation, with enough wine to obtain three pints. Dose from  $\frac{1}{2}$  to 2 fluid ounces.

**Bitters, Wine.**

Sassafras .....	$\frac{1}{2}$ ounce
Chamomile .....	1 ounce
Angostura .....	1 ounce
Gentian .....	1 ounce
Anise seed.....	2 ounces
Malaga wine.....	1 gallon

Macerate the powdered drugs for a week and filter.

**Bitters, Wild Cherry.**

Wild cherry bark.....	4 ounces
Peruvian bark.....	$\frac{1}{2}$ ounce
Cardamom .....	$\frac{1}{2}$ ounce
Hazelnut .....	$\frac{1}{4}$ ounce
Orange peel (sweet).....	2 ounces

Digest in 6 pints of dilute alcohol for eight days; press out, filter and add  $1\frac{1}{2}$  pints of honey,  $1\frac{1}{2}$  pints simple syrup, and sufficient water to bring the whole up to 1 gallon.

**Tonic for Anaemia.**

Sodium salicylate.....	4 drams
Glycerin .....	2 ounces
Oil of wintergreen.....	20 minims
Tincture of iron.....	4 drams
Citric acid.....	10 grains
Solution ammonium citrate (B. P.) enough to make. ....	4 ounces

Mix, dissolve and filter.

Dessertspoonful in water three or four times a day.

**Alterative Tonic.**

Mercury bichloride.....	1 grain
Solution of arsenous acid.....	1 dram
Tincture of iron chloride.....	4 drams
Hydrochloric acid, dilute.....	4 drams
Syrup .....	3 ounces
Water, enough to make.....	6 ounces

Mix. A dessertspoonful in a wineglass of water after each meal.

**Tonic for Anaemia.**

Salicylic acid.....	320 grains
Iron pyrophosphate.....	80 grains
Sodium pyrophosphate.....	16 grains
Distilled water.....	8 ounces

Mix, dissolve and filter.

Take a tablespoonful every three hours.

**Mixture Arseniate Iron.**

Wine of iron.....	3 ounces
Solution of potassium arseniate .....	$\frac{1}{2}$ ounce
Syrup .....	$1\frac{1}{2}$ ounces
Water .....	3 ounces

Mix. Dose, one teaspoonful, diluted, after each meal.

**Tonic, General.**

Quinine sulphate.....	16 grains
Strychnine sulphate.....	$\frac{1}{2}$ grain
Potassium citrate.....	$1\frac{1}{2}$ drams
Tincture of ferric chloride.....	5 drams
Syrup .....	1 ounce
Water, enough to make.....	4 ounces

Mix. Teaspoonful three or four times a day.

**Tonic, Iron.**

Gentian .....	2 ounces
Bitter orange.....	1 ounce
Calamus .....	1 ounce
Tincture of citro-chloride of iron.....	1 ounce
Rectified spirit.....	4 ounces
Water .....	8 ounces
Syrup .....	4 ounces

Exhaust the vegetable drugs with the spirit and water previously mixed, adding sufficient of a menstruum of the same alcoholic strength until 12 fluid ounces are obtained. To this tincture add the tincture of iron, and mix with the syrup.

**Iron Tonic Bitters.**

Iron and quinine citrate.....	2 drams
Citric acid.....	$1\frac{1}{2}$ drams
Glycerin .....	2 ounces
Tincture of orange peel.....	1 ounce
Tincture of nux vomica.....	2 drams
Sherry wine.....	4 ounces
Water, enough to make.....	20 ounces

Mix. Dose: Two teaspoonfuls three times a day in half a wineglassful of water.

**Tonic, Wine.**

Extract of cinchona.....	$1\frac{1}{2}$ ounces
Tincture of nux vomica.....	$\frac{1}{2}$ ounce
Bordeaux wine (claret), to make .....	1 gallon
Syrup bitter orange peel.....	$1\frac{1}{2}$ pints

Mix and dissolve. After one week filter.

**Tonic Nervine Wine.**

Phosphoric acid, dilute.....	3 ounces
Wine of cinchona.....	1 pint
Tincture of valerian, ammoniated .....	8 ounces
Glycerin .....	2 pints
Sherry, to make.....	1 gallon

Mix and filter.

Dose, 1 to 2 teaspoonfuls 3 to 4 times a day.

**Tonic Kola Wine.**

Fluidextract of kola..... 4 ounces  
 Tincture of nux vomica.....1½ ounces  
 Syrup of orange peel..... 1 pint  
 Malvoisie or sherry wine,  
 sufficient to make..... 1 gallon  
 Mix and filter.

**Tonic, Philadelphia.**

Tincture of iron chloride. ½ ounce  
 Acetic acid, dilute..... 1 ounce  
 Solution of ammonium  
 acetate .....4½ ounces  
 Syrup of orange peel.....1½ ounces  
 Glycerin ..... ½ ounce  
 Mix.

**Tonic, Quinine.**

Quinine sulphate..... 1 dram  
 Phosphoric acid, dilute...1½ ounces  
 Tincture of orange..... 3 ounces  
 Glycerin ..... 3 ounces  
 Tincture of nux vomica... 6 drams  
 Spirit of chloroform..... 6 drams  
 Distilled water, enough to  
 make ..... 50 ounces  
 Mix. Dose, one to two tablespoonfuls.

**Tonic, Iron and Quinine.**

Iron and quinine citrate.. 1 ounce  
 Orange flower water, triple.1½ ounces  
 Chloroform water..... 25 ounces  
 Water, enough to make... 36 ounces  
 Mix. One tablespoonful in a wineglass of  
 water two or three times a day.

**Tonic, Quinine.**

Quinine sulphate..... 2 ounces  
 Tincture of gentian comp.. 4 ounces  
 Tincture of cardamom  
 comp. .... 8 ounces  
 Tincture of nux vomica... 2 ounces  
 Elixir simple, enough  
 to make..... 1 gallon  
 Mix. Dissolve the quinine in the tinctures,  
 add the elixir and filter. Dose, a table-  
 spoonful between meals.

**Tonic, Quinine and Iron.**

Quinine sulphate..... 3 drams  
 Solution of perchloride of  
 iron ..... 1 ounce  
 Spirit of chloroform..... 2 ounces  
 Tincture of calumba..... 2 ounces  
 Syrup ..... 4 ounces  
 Glycerin ..... 4 ounces  
 Orange flower water..... 24 ounces  
 Distilled water, enough to  
 make ..... 64 ounces  
 Mix the iron solution with 10 ounces of the  
 orange flower water, and in this dissolve the  
 quinine. Then add the other ingredients and  
 make up to 64 ounces. Set aside for 24  
 hours, and filter.

**Tonic, Quinine and Iron.**

Iron and quinine citrate.. 1 ounce  
 Tincture of orange..... 1 ounce  
 Chloric ether (Duncan's).. 2 ounces  
 Glycerin ..... 2 ounces  
 Rectified spirit..... 1 ounce  
 Distilled water, enough to  
 make ..... 48 ounces  
 Dissolve the citrate in 20 ounces of water,  
 and to this add the other ingredients in  
 the above order. Set aside for a few days,  
 and filter. Dose for adults: One table-  
 spoonful three times a day, an hour before  
 meals.

**Tonic, Roza (Elixir Bark and Celery).**

Celery seed, powdered.... 2 av. ounces  
 Red cinchona..... 1 ounce  
 Orange peel..... ¼ ounce  
 Coriander seed..... ¼ ounce  
 Lemon peel..... ¼ ounce  
 Muritic acid..... 15 minims  
 Alcohol ..... 5 fl. ounces  
 Glycerin ..... 3 fl. ounces  
 Water ..... 4 fl. ounces  
 Syrup ..... 4 fl. ounces  
 Instead of lemon peel an equivalent of oil  
 of lemon may be used.  
 Mix all the drugs and grind to about No.  
 40 powder.

Add the mixture of acid, alcohol, glycerin  
 and water; macerate 24 hours, then percolate,  
 adding enough alcohol and water in the pro-  
 portions given to make 12 fluid ounces. Add  
 the syrup, and if necessary, filter. The fla-  
 voring may be altered to suit. Some like  
 rose. Add instead then, of the lemon, orange  
 and coriander, red rose leaves, powdered, 1  
 ounce.

**Tonic Stomachic.**

Gentian root..... 4 ounces  
 Orange peel..... 1 ounce  
 Coriander seed..... 1 ounce  
 Alcohol ..... 32 ounces  
 Water, enough to make... 1 gallon  
 Allow to macerate several days; express,  
 and filter. The filtered liquid may be colored  
 a rich brown if desired by caramel. Dose,  
 one tablespoonful three or four times a day.

**BLOOD PURIFIERS.****Blood Mixture.**

Solution of potassa..... 30 minims  
 Potassium iodide..... 64 grains  
 Spirit of chloroform..... 4 drams  
 Compound decoction of sar-  
 saparilla ..... 2 ounces  
 Distilled water, enough to  
 make ..... 8 ounces  
 Dose: One to two tablespoonfuls.

**Blood Mixture.**

Chloroform ..... 12 minims  
 Alcohol ..... ½ ounce  
 Solution of potassa..... ½ dram  
 Potassium iodide..... 64 grains  
 Distilled water, enough to  
 make ..... 8 ounces  
 Burnt sugar, a sufficiency.  
 Dose: One to two tablespoonfuls.

**Blood Mixture.**

Rochelle salt..... 1 ounce  
 Fluidextract of sarsaparilla 1 ounce  
 Fluidextract of stillingia.. 1 ounce  
 Fluidextract of yellow dock ½ ounce  
 Chloroform water..... 8 ounces  
 Syrup, enough to make... 1 pint  
 Mix and dissolve. Filter.  
 Dose: A tablespoonful 3 times a day.

**Blood Remedy.**

Sarsaparilla root..... 1 pound  
 Burdock root..... 1 pound  
 Dandelion root..... ½ pound  
 Mandrake root..... ¼ pound  
 Rhubarb ..... 2 ounces  
 Red clover blossoms..... ½ pound  
 Boiling water, about..... 3 gallons

Steep over a slow fire for 12 hours. Strain through a fine cloth and, while still hot, add granulated sugar, 5 pounds. If it does not dissolve, add a little more heat. Then take

Potassium iodide.....2½ ounces  
Alcohol, 95 per cent..... 1 quart  
Mix all together and add water to make 4 gallons.

Dose, 1 tablespoonful three times a day a half hour after meals.

#### Blood Purifier.

Burdock root..... 4 ounces  
Blue flag root..... 1 ounce  
Dandelion root..... 3 ounces  
Sassafras bark..... 1 ounce  
Sarsaparilla..... 4 ounces  
Wild cherry bark..... 2 ounces

Mix the cut ingredients thoroughly and make a quart of decoction. Then add 1 pint of whisky. Dose: ½ wineglassful between meals.

#### Blood Purifier.

Fluidextract of cinchona.. 2 ounces  
Fluidextract of calumba.. 2 drams  
Fluidextract of guaiacum.. 4 drams  
Fluidextract of licorice.... 4 drams  
Tincture of figwort..... 4 drams  
Podophyllin..... 15 grains  
Alcohol (for dissolving podophyllin)..... 2 drams  
Glycerin..... 12 ounces

Dose, 1 teaspoonful three times a day after meals.

#### Blood Purifier.

Pine buds (shoots)..... 6 ounces  
Guaiac wood..... 4 ounces  
Sassafras bark..... 1 ounce  
Juniper berries..... 2 ounces  
Whisky or diluted alcohol 1 gallon

Dose, 30 to 60 minims two to four times a day.

#### Blood Purifier.

Fluidextract of sarsaparilla 1 ounce  
Fluidextract of stillingia.. 1 ounce  
Fluidextract of yellow dock 1 ounce  
Podophyllin..... 3 grains  
Water..... 4 ounces  
Simple elixir..... 4 ounces  
Alcohol..... 2 ounces  
Glycerin..... 2 ounces  
Potassium iodide..... 90 grains

Mix. From 1 tea to one dessertspoonful three times a day.

#### Blood Purifier.

Fluidextract of sarsaparilla comp. .... 5 ounces  
Tincture of prickly ash... 10 ounces  
Fluidextract of poke root .. 15 ounces  
Fluidextract of burdock .. 15 ounces  
Fluidextract of stillingia .. 15 ounces

Mix. Teaspoonful three or four times a day.

#### Blood Purifying drops, Laxitriptfen.

Jalap, coarsely powdered.. 15 drams  
Aloes..... ¼ dram  
Oil star anise..... ¼ dram  
Oil caraway..... ¼ dram  
Alcohol..... 3 ounces

Macerate one day, then add dilute alcohol, 4 ounces, strain; adding a sufficiency of dilute alcohol through the strainer, to the liquid, to bring the measure to 6 ounces; to the strained filtrate mix glycerin, 6 ounces. Dose, as a mild purgative, 1 teaspoonful.

#### Blood Purifier.

Fluidextract of sarsaparilla comp. .... 5 ounces  
Fluidextract of poke root .. 10 ounces  
Fluidextract of burdock .. 5 ounces  
Epsom salt..... 1 pound  
Chloroform water..... 5 pounds  
Alcohol, enough to make.. 1 gallon

Mix, dissolve and filter.

#### Blood Purifier, Alternative Mixture.

Tincture of prickly of ash bark ..... 10 drams  
Fluidextract of burdock.... 2 ounces  
Fluidextract of poke root.. 2 ounces  
Fluidextract of stillingia.. 2 ounces  
Fluidextract of sarsaparilla enough to make..... 3 pints

Mix. Dose, teaspoonful three times a day.

#### Blood Purifier, Aperient Tonic.

Buckthorn bark..... 5 pounds  
Sodio-potassium tartrate.. 2 pounds  
Potassium bicarbonate... 2 ounces  
Sugar..... 6 pounds  
Alcohol..... 6 pints  
Spirit of lemon N. F..... 3 ounces  
Tincture of ginger..... 3 ounces  
Oil of anise..... 1 dram  
Water, enough.

With sufficient water make three gallons of decoction from the buckthorn bark (deprived of bitterness by the addition of calcined magnesia), and dissolve in it the sodio-potassium tartrate, potassium bicarbonate and sugar. After allowing to stand for some time, clarify by straining through flannel. Then mix the remaining ingredients and incorporate with the decoction. Dose, from 1 to 2 tablespoonfuls.

#### Blood Purifier, Red Clover.

Fluidextract of red clover 8 ounces  
Alcohol..... 5 ounces  
Syrup..... 36 ounces  
Potassium iodide..... 3 drams  
Water..... 2 ounces

Mix and dissolve.

#### Blood Purifier, Sarsaparilla.

Potassium iodide.....320 grains  
Water..... 2 fl. ounces  
Fluidextract of burdock... 2 fl. ounces  
Compound syrup of sarsaparilla..... 8 fl. ounces  
Syrup, enough to make.. 16 fl. ounces

Mix and dissolve. Dose, one or two teaspoonfuls, after meals.

#### Sarsaparilla and Potassium Iodide.

Sarsaparilla, ground..... 1 pound  
Burdock root..... 3 ounces  
Dandelion root..... 3 ounces  
Prickly ash bark..... 3 ounces  
Chamomile, Roman..... 3 ounces  
Sassafras bark..... 4 ounces  
Potassium iodide..... 1 av. ounce  
Sodium salicylate..... ½ av. ounce  
Glycerin..... 12 fl. ounces  
Alcohol..... 1½ pints  
Water, enough to make.. 1 gallon

Grind all the herbs to No. 20 powder. Mix the glycerin and alcohol with 2 quarts of water; macerate 24 hours and percolate. When the liquid has ceased to drop, pour in hot water until a gallon altogether has been percolated. Add the potassium iodide and sodium salicylate and dissolve. If not sufficiently dark to suit the eye, add caramel, 1 fluid ounce.



**Blood Purifier, Sarsaparilla.**

Potassium iodide.....	90 grains
Sugar .....	1 ounce
Fluidextract of stillingia..	2 drams
Fluidextract of yellow dock	3 ounces
Fluidextract of sarsaparilla	3 ounces
Alcohol .....	3 ounces

Mix and dissolve. A teaspoonful in a wine-glass of water.

**Sarsaparilla with Potassium Iodide.**

Compound fluidextract of sarsaparilla .....	2 ounces
Compound fluidextract of stillingia .....	1 ounce
Fluidextract of guaiacum..	½ ounce
Fluidextract of buckthorn bark .....	½ ounce
Oil of wintergreen .....	5 minims
Oil of sassafras .....	5 minims
Elixir of calisaya (made from alkaloids without acid) .....	4 ounces
Potassium iodide.....	2 drams
Syrup .....	8 ounces

Mix and dissolve. One or two teaspoonfuls in water after meals.

**Sarsaparilla and Stillingia.**

Compound fluidextract of sarsaparilla .....	2 ounces
Fluidextract of stillingia..	1 ounce
Fluidextract of yellow dock	1 ounce
Syrup .....	12 ounces

Mix. A teaspoonful after meals.

**Sarsaparilla and Turkey Corn.**

Compound fluidextract of sarsaparilla .....	2 fl. ounces
Fluidextract of sassafras..	1 fl. ounce
Fluidextract of Turkey corn .....	1 fl. ounce
Syrup .....	12 fl. ounces

Mix. A teaspoonful after meals.

**Sarsaparilla and Yellow Dock.**

Fluidextract of sarsaparilla	5 fl. ounces
Fluidextract of yellow dock	4 fl. ounces
Fluidextract of stillingia..	5 fl. ounces
Fluidextract of May-apple root .....	1 fl. ounce
Fluidextract of senna .....	2 fl. ounces
Oil of wintergreen .....	20 minims
Oil of sassafras .....	20 minims
Alcohol, dilute.....	20 fl. ounces
Syrup .....	36 fl. ounces

Mix. Two teaspoonfuls after meals.

**Sarsaparilla and Wild Cherry.**

Fluidextract of sarsaparilla	8 ounces
Fluidextract of wild cherry	8 ounces
Tincture of cardamom comp. ....	8 ounces
Elixir, simple, enough to make .....	1 gallon

Mix and filter. One half to one tablespoonful after meals.

**Blood and Liver Syrup.**

Syrup of stillingia compound .....	8 ounces
Fluidextract of senna .....	1 ounce
Fluidextract of podophyllum	¼ ounce
Fluidextract of licorice ..	1 ounce
Potassium bromide.....	3 drams

Mix. Adult dose, a teaspoonful three times a day.

**ASTHMA, CATARRH, HAY FEVER.****Catarrh Cure.**

Carbolic acid.....	½ ounce
Glycerin .....	2 ounces
Distilled water.....	1 ounce
Fluidextract of stramonium	½ ounce

Add one teaspoonful to one-half pint of water, and use with a nasal douche.

**Catarrh Cure.**

Vaseline .....	1 ounce
Thymol .....	3 grains
Bismuth carbonate.....	15 grains
Oil of wintergreen.....	2 minims

The above is said to be a good substitute for Ely's cream balm.

**Acute Catarrh (Carbolic Inhalant).**

Tincture of iodine.....	½ ounce
Carbolic acid.....	2 drams

Mix. Place a small wide-mouthed bottle containing a moistened sponge in a vessel of hot water. Drop five or ten drops of the solution on the sponge, and as the vapor of the iodine ascends with the vapor of the water, inhale it.

**Catarrh Inhalant.**

Tincture of benzoin comp.	2 ounces
Menthol .....	2 drams
Tincture of iodine.....	1 ounce

Mix and dissolve. Pour a teaspoonful on boiling water and inhale the steam.

**Creosote Inhalant.**

Menthol .....	4 drams
Creosote .....	1 ounce
Oil of pinus pumilio .....	1 ounce
Oil of eucalyptus .....	1 ounce
Oil of gaultheria .....	4 drams
Oil of cajuput .....	4 drams

Mix.

**Catarrh and Laryngitis.**

Resorcin .....	2 drams
Sodium salicylate.....	1 dram
Sodium borate.....	1 dram
Glycerin .....	2 fl. ounces
Water, enough to make...	8 fl. ounces

Mix. This solution will soften and bring away all hardened secretions, relieve the congestion and lessen the usual discharge.

Dose, a teaspoonful every 3 hours.

**Catarrh Powder.**

Bismuth subnitrate.....	3 drams
Powdered acacia.....	2 drams
Powdered talc.....	2 drams
Morphine hydrochloride...	1 grain

Mix. Use as a snuff.

**Anticatatrrhal Salts.**

Absolute phenol.....	1 ounce
Ammonium carbonate.....	6 drams
Strong ammonia water...	1½ ounces
Oil of lavender.....	1½ drams
Camphor .....	½ dram

Pine sawdust (sifted) quantity sufficient.  
Mix. Use as an inhalant.

**Menthol Catarrh Snuff.**

Menthol .....	½ dram
Sugar of milk.....	1 ounce
Coffee, roasted.....	1 ounce
Boric acid.....	½ dram
Orris root.....	1 ounce

Reduce all to a very fine powder and mix.

**Catarrh Snuff.**

Scotch snuff, 1 ounce; chloride of lime, dried and pulverized, 1 good teaspoonful. Mix and bottle, corking tightly.

**Catarrh Snuff.**

Bismuth subnitrate.....1½ drams  
Powdered benzoïn.....1½ drams  
Powdered boric acid.....1 dram  
Menthol.....3 grains

Mix. A pinch 5 or 6 times daily, well drawn up.

**Catarrh Snuff.**

Cocaine hydrochloride.....10 grains  
Oil of eucalyptus.....3 grains  
Iodoform.....1 dram  
Sugar of milk.....1 ounce

**Catarrh Snuff.**

Cocaine hydrochloride.....10 grains  
Sugar of milk.....½ ounce  
Orris root, powdered.....½ ounce

Mix well.

**Catarrh Snuff.**

Powdered belladonna leaves 20 grains  
Cocaine hydrochloride.....5 grains  
Oil of rose.....1 drop  
Powdered acacia.....½ ounce

Mix well.

**Catarrh Snuff.**

Powdered starch.....10 drams  
Bismuth subnitrate.....10 drams  
Boric acid, powdered.....3 drams  
Camphor, powdered.....15 grains  
Morphine sulphate.....5 grains

Mix well.

**Catarrh Snuff.**

Powdered loaf sugar.....½ ounce  
Powdered borax.....¼ ounce  
Powdered common salt.....¼ ounce  
Oil of peppermint.....4 drops

Mix, and triturate thoroughly. To be used as a snuff several times daily.

**Snuff for Nasal Catarrh.**

Tannic acid.....8 grains  
Powdered orris root.....6 drams  
Powdered sugar.....6 drams

Mix.

**Catarrh Snuff.**

Powdered belladonna leaves.....30 grains  
Tannic acid.....10 grains  
Powdered orris root.....1 ounce  
Sugar of milk.....1 ounce

Mix well.

**Catarrh Snuff.**

Tannic acid.....10 grains  
Powdered borax.....½ ounce  
Powdered orris root.....½ ounce  
Sugar of milk.....1 ounce  
Oil of rose.....2 drops

Mix well.

**Cephalic Snuff.**

White hellebore.....1 ounce  
Orris root.....½ ounce  
Bayberry root, powdered.....½ ounce  
Starch, powdered.....6 ounces  
Oil of cloves.....10 drops

Rub up the oil with the starch and add the other powders, mixing by slight rubbing.

For headache, catarrh, toothache, and other nervous complaints.

**Catarrh Snuff.**

Salicylic acid.....10 grains  
Sugar of milk.....1 ounce

Mix well.

**Catarrh Snuff.**

Salicylic acid.....15 grains  
Tannin.....10 grains  
Powdered orris root.....1 ounce  
Sugar of milk.....1 ounce  
Oil of cloves.....2 drops  
Oil of peppermint.....2 drops

Mix well.

**Snuff for Colds.**

Menthol.....3 grains  
Boric acid.....1 dram  
Bismuth subcarbonate.....1½ drams  
Powdered benzoïn.....1½ drams  
Sodium bicarbonate.....10 grains  
Magnesium carbonate.....25 grains  
Powdered orris.....1 ounce

Mix.

**Chronic Rhinitis.**

Menthol, citric acid, lithium carbonate, and powdered benzoïn, of each, equal parts. Five or six pinches daily for each nostril.

**Spray for Catarrh.**

Carbolic acid.....10 minims  
Glycerin.....2 drams  
Vaseline.....2 ounces

Warm, and use as a spray every four hours.

**Spray for Catarrh.**

Thymol.....10 grains  
Eucalyptol.....10 drops  
White oil.....4 ounces

Mix and dissolve.

**Spray for Catarrh.**

Carbolic acid, crystals... 10 grains  
Thymol.....10 grains  
Oil of pine.....5 grains  
White oil.....4 ounces

Mix and dissolve.

**Spray for Catarrh.**

Menthol.....8 grains  
Camphor.....8 grains  
Eucalyptol.....20 drops  
Liquid vaseline.....4 ounces

Mix and dissolve.

**Spray for Catarrh.**

Menthol.....10 grains  
Thymol.....10 grains  
Oil of eucalyptus.....20 drops  
Oil of pine needles.....10 drops  
Liquid paraffin.....4 ounces

Mix and dissolve.

**Spray for Catarrh.**

Cocaine, alkaloid.....10 grains  
Eucalyptol.....10 drops  
Liquid paraffin.....2 ounces

Mix and dissolve.

**Spray for Catarrh.**

Cocaine, alkaloid.....15 grains  
Thymol.....5 grains  
Menthol.....10 grains  
Eucalyptol.....10 grains  
Camphor.....5 grains  
Liquid paraffin.....4 ounces

Mix and dissolve.

**Chronic Catarrhal Rhinitis.**

Pulverized alum.....2 drams  
Borax.....2 drams  
Menthol.....12 grains  
Zinc tannate.....3 drams  
Bismuth tannate.....3 drams  
Lycopodium.....1 ounce

Reduce to a fine powder and mix.

**Scrofulous Rhinitis.**

Zinc sulphophenate.....	15 grains
Zinc tannate.....	2 drams
Pulverized tobacco.....	10 drams
Bismuth salicylate.....	4 drams
Iodol .....	3 drams

Mix well.

**Asthma.**

Potassium iodide.....	1½ drams
Fowler's solution.....	1 dram
Hoffman's anodyne.....	2 ounces
Tincture of belladonna....	2 drams
Syrup of orange, enough to make .....	6 ounces

Take 2 teaspoonfuls in water an hour after meals.

**Asthma.**

Fluidextract of nux vomica	1 dram
Fluidextract of euphorbia pilulifera .....	6 drams
Syrup of hydriodic acid...	5 drams
Syrup of hypophosphites compound .....	1½ ounces
Syrup .....	1 ounce
Water .....	2 ounces

Mix. Dose, 1 tablespoonful every three hours. Shake well.

**Asthma.**

Tincture of lobelia.....	1 ounce
Ammonium iodide.....	2 drams
Ammonium bromide.....	3 drams
Syrup of tolu.....	3 ounces

Mix. Dose, a teaspoonful every one, two, three or four hours as required.

**Asthma.**

Potassium iodide.....	½ dram
Tincture of lobelia.....	½ dram
Tincture of senega.....	½ dram
Opium extract.....	½ grain
Distilled water, enough to make .....	6 ounces

Mix. Tablespoonful mornings and evenings in a wineglassful of water.

**Asthma.**

Powdered lobelia leaves...	4 drams
Powdered stramonium leaves .....	4 drams
Potassium nitrate.....	4 drams
Powdered black tea.....	4 drams

Mix. The fumes from the burning mixture are to be inhaled.

**Asthma.**

Potassium nitrate.....	2 parts
Powdered aniseed.....	2 parts
Powdered stramonium leaves .....	4 parts

Mix. A thimbleful of the mixture is placed in a conical heap on a plate and lighted at the top and the fumes inhaled.

**Asthma.**

Stramonium leaves, ground	4 ounces
Fluidextract of belladonna	2 ounces
Tincture of opium.....	2 ounces
Pulverized saltpetre.....	3 ounces

Mix the powders thoroughly, add the liquids. Ignite a small quantity, inhaling the fumes.

**Asthma.**

Stramonium leaves.....	2 ounces
Lobelia leaves.....	2 ounces
Belladonna leaves.....	1 ounce
Saltpetre .....	2 ounces

Reduce to fine powder and mix.

Ignite and inhale the fumes.

**Asthma.**

Tincture of lobelia.....	1 ounce
Tincture of euphorbium....	½ ounce
Spirit of ether, comp.....	1 ounce
Potassium iodide.....	1 dram
Distilled water, enough to make .....	8 ounces

Mix. Two teaspoonfuls 3 times a day.

**Asthma.**

Fluidextract of lobelia ...	10 drams
Fluidextract of sanguin- aria .....	4 drams
Fluidextract of symplocar- pus .....	10 drams
Fluidextract of grindelia (from green leaves).....	30 drams
Chloroform .....	6 drams
Extract of malt.....	7½ ounces

Dose, 1 teaspoonful every half hour in water until a slight nausea and faintness are experienced, or the attack has been relieved, after which continue the medicine in teaspoonful doses three times daily, after meals, for one or two months.

**Asthma Cigarettes.**

Extract of stramonium....	1 dram
Tobacco .....	2½ ounces
Potassium iodide.....	1 dram
Potassium nitrate.....	1 dram

To make one hundred cigarettes.

**Asthma Cigarettes.**

Belladonna leaves.....	1 dram
Stramonium leaves.....	1 dram
Digitalis leaves.....	1 dram
Sage leaves.....	1 dram

Are extracted with

Hot water.....	25 ounces
And to the filtrate are added	
Potassium nitrate.....	2 ounces
Tincture of benzoin.....	1 ounce

Into this liquid thin sheets of blotting paper are immersed one after another, where they are left for 24 hours, after which they are dried and cut up into sheets of desired size, which are made into cigarettes.

**Espic Cigarettes.**

Belladonna leaves.....	22 parts
Hyoscyamus .....	12 parts
Stramonium .....	12 parts
Phellandrium .....	4 parts
Opium .....	1 part

Mix and make into cigarettes.

**Asthma Cigarettes.**

Stramonium leaves.....	1 ounce
Lobelia leaves.....	1 ounce
Sage leaves.....	1 ounce
Tobacco leaves.....	8 ounces
Potassium nitrate.....	½ ounce

Reduce to coarse powder and make into cigarettes.

**Asthma Cigarettes, Vauquelin's.**

Sodium arseniate.....	3 grains
Extract of belladonna....	7 grains
Extract of stramonium....	7 grains

Dissolve the ingredients in the smallest possible amount of water, and immerse in the solution a piece of bibulous paper sufficiently large to just take up the amount of liquid. Dry, and cut into 24 parts, each of which, rolled in proper paper, makes one cigarette.



**For Asthma.**

Tincture of lobelia.....	1 ounce
Tincture of opium.....	1 dram
Cinnamon water.....	2 ounces
Alcohol .....	2 ounces

Mix. Dose, teaspoonful.

**Asthma Inhalant.**

Ether .....	1 ounce
Oil of turpentine.....	4 drams
Benzoic acid.....	4 drams
Tolu balsam.....	2 drams

Mix. To be inhaled from a wide-mouthed bottle, during the attack.

**Mackenzie's Asthma Powder.**

Lobelia .....	1 ounce
Black tea.....	1 ounce
Stramonium .....	1 ounce
Potassium nitrate.....	1 ounce
Anise .....	1 dram
Fennel .....	1 dram

Mix. Attention to the stomach will do most for many asthmatic patients. An important point is to take the heaviest meal early in the day, and no very solid food after 2 p. m. Shower bath and out-of-door exercise, not, however, to a fatiguing extent, are serviceable. In special cases operative treatment of the nose and naso-pharynx is required. Inhale the fumes twice or 3 times a day.

**Asthma Powder.**

Lobelia .....	1 ounce
Potassium nitrate.....	1 ounce
Stramonium leaves.....	1 ounce
Tea leaves.....	1 ounce
Oil of eucalyptus.....	30 minims

Powder the solids, mix thoroughly and incorporate the oil of eucalyptus.

**Influenza.**

Codeine .....	1-6 grain
Antipyrine .....	10 grains
Sodium bicarbonate.....	3 grains

Mix. For 12 powders. One, three times a day.

**Influenza.**

Dilute phosphoric acid....	15 minims
Spirit of chloroform.....	25 minims
Syrup of squill.....	1 dram
Water, enough to make..	1 ounce

Mix. Four or six times every 24 hours.

**Influenza.**

Menthol .....	15 grains
Cocaine hydrochloride.....	3 grains
Lanolin ointment.....	1 ounce

Mix. Apply to nostrils.

**Influenza.**

Sodium salicylate.....	30 grains
Dilute hydrochloric acid....	10 minims
Wine of ipecac.....	1 dram
Simple syrup.....	1 ounce
Water, enough to make..	5 ounces

Mix. Tablespoonful three times a day.

**Influenza, Clayton's Mixture.**

Ammonium carbonate.....	1 dram
Potassium bicarbonate.....	1 dram
Tincture of orange.....	4 drams
Orange flower water.....	3 drams
Water, enough to make..	8 ounces

Mix. Two tablespoonfuls three times a day in half an ounce of lemon juice.

**Influenza Tonic.**

Dilute nitric acid.....	10 minims
Spirit of chloroform.....	½ dram
Infusion of cinchona.....	1 ounce

Mix. Three or four times a day.

**Influenza.**

Sodium salicylate.....	1 dram
Wine of ipecac.....	2 drams
Tincture of sanguinaria..	4 drams
Tincture of belladonna...	2 drams
Syrup of wild cherry,	
enough to make.....	8 ounces

Mix. A tablespoonful 3 times a day.

**Cough of Influenza.**

Syrup of tar.....	1½ ounces
Spirit of ammonia aromatic	½ ounce
Syrup of wild cherry.....	1½ ounces
Potassium iodide.....	½ dram

Mix. Teaspoonful every two or four hours.

**Influenza.**

Heroin hydrochloride.....	½ grain
Camphor .....	12 grains
Acetphenetidin .....	30 grains
Quinine sulphate.....	6 grains
Sugar of milk.....	2 drams

Mix well together and divide into 12 powders. One powder every four hours.

**Cold in the Head.**

Menthol .....	3 grains
Powdered boracic acid....	1 dram
Bismuth subnitrate.....	1½ drams
Powdered benzoïn.....	1½ drams

Mix. A good-sized pinch of this may be snuffed up five or six times a day.

**Cold in the Head.**

One and one-half grains of morphine hydrochloride and 1 dram bismuth subnitrate, to be used as a snuff, which should last at least 48 hours. It is made a little better by the addition of 10 grains of gum arabic.

**Cold in the Head.**

As a preventive take these pills at bedtime:

Powdered aconite leaves..	3 grains
Calomel .....	¾ grain
Powdered ipecac.....	¾ grain
Extract of henbane.....	3 grains

Make into two pills.

**Cold in the Head.**

A teaspoonful of powdered camphor is placed in a jug half full of boiling water, and over the mouth of the vessel a paper cornucopia is fastened, the pointed end being cut off so as to fit the nostril. The vapor is now inhaled for 10 or 15 minutes. It is stated that three inhalations will cure the worst case.

**Snuff for Colds.**

Sodium bicarbonate.....	2 grains
Magnesium carbonate	
(light) .....	3 grains
Menthol .....	1 grain
Cocaine hydrochloride....	4 grains
Milk sugar.....	1½ drams

Mix. Use as a snuff.

**Snuff for Hay Fever.**

Boric acid.....	2 ounces
Sodium salicylate.....	2½ ounces
Cocaine hydrochloride.....	1 dram

Powder well and mix. Use every 3 hours.

**Snuff for Colds.**

Menthol .....	2 grains
Camphor .....	5 grains
Thymol .....	2 grains
Sodium bicarbonate.....	10 grains
Cocaine hydrochloride.....	5 grains
Sugar of milk.....	2 ounces
Powder and mix. Use every 3 hours.	

**Snuff for Hay Fever.**

Borax .....	20 grains
Capsicum .....	15 grains
Ammonium carbonate.....	10 grains
Sugar milk.....	½ ounce
Mix well and use every 4 hours.	

**Remedy for Hay Fever.**

Camphor .....	1 dram
Chloroform .....	1 dram
Extract of belladonna.....	4 grains
Sodium bicarbonate.....	20 grains
Benzoinated lard.....	1 ounce

Rub together the first three, add the lard, and lastly the sodium bicarbonate. Apply freely to the nostrils with the little finger.

**Remedy for Hay Fever.**

Acetphenetidin .....	3 grains
Camphor .....	¼ grain
Extract of belladonna.....	¼ grain
Ipecac, powdered.....	½ grain
Quinine sulphate.....	½ grain
Heroin hydrochloride.....	1/24 grain

Make one capsule. Take one every 3 hours.

**SALVES, OINTMENTS, ETC.****Black Salve, or Plaster.**

Olive oil.....	20 ounces
Lard .....	16 ounces
Mutton suet.....	16 ounces
Litharge .....	14 ounces
Resin .....	8 ounces
White wax.....	8 ounces
Ivory black, sufficient to color.	

Melt the oils and fats, and stir in the litharge; boil until the mass becomes of a brown color, then add the resin, wax, and lastly, the ivory black.

**Carbolic Salve.**

Petrolatum .....	16 ounces
Yellow wax.....	1 5/9 ounces
Camphor .....	1 ounce
Carbolic acid.....	2/3 ounce
Oil of sassafras.....	30 minims

Melt the carbolic acid, and while warm add the camphor and oil of sassafras. Melt the wax and add to the petrolatum, melting them together; while cooling, but still liquid, add the solution of camphor in carbolic acid, etc., and stir occasionally while cooling. This is an excellent carbolic ointment, the caustic properties of the carbolic acid being neutralized by the camphor.

**Green Mountain Salve.**

Rosin, 5 pounds; Burgundy pitch, beeswax and mutton tallow, of each ¼ pound; oil of hemlock, balsam of fir, oil of origanum, oil of red cedar, and Venice turpentine, of each, 1 ounce; oil of wormwood, ½ ounce; verdigris, very finely pulverized, 1 ounce. Melt the first articles together, and add the oils, having rubbed the verdigris up with a little of the oils, and put it in with the other articles, stirring well; then pour into cold water, and work as wax until cool enough to roll.

**Domestic Salve.**

Camphor .....	1 ounce
Carbolic acid.....	6 drams
Vaseline .....	1 pound
Diachylon plaster.....	6 ounces

Melt together the vaseline and the plaster, and stir in the camphor and carbolic acid when nearly cold.

**Carbolic Healing Salve.**

Carbolic acid.....	2 drams
Lanolin .....	1 ounce
Resin cerate.....	4 ounces

Melt together and stir till cool. This is an excellent salve for old sores.

**Cooling and Healing Ointment.**

Vaseline .....	2 ounces
Zinc ointment.....	1 ounce
Ointment of boric acid..	1 ounce

Mix thoroughly.

**O. K. Household Salve.**

Citrine ointment.....	2 ounces
Oil of tar.....	½ ounce
Carbolic salve.....	¼ ounce
Glycerin .....	2 ounces
Mutton tallow, enough to make .....	1 pound

Mix, and melt over a slow fire; stir until cold.

**Household Salve.**

Mutton suet.....	1 pound
Vaseline .....	½ pound
Oil of tar, pure.....	2 ounces
Carbolic acid.....	½ ounce

Melt all together and stir till cold.

**Stick Salve.**

Resin .....	6 ounces
Black pitch.....	6 ounces
Cacao butter.....	1 ounce
Lard .....	3 ounces

Melt over a gas flame, allowing the mixture to be heated for a few minutes afterwards, then pour into a dish of cold water, knead with the hands, and as soon as the mass is cool enough to handle, remove from the water and work until tough; then form into sticks.

**Ointment Acne.**

Naphthol .....	1 ounce
Precipitated chalk.....	1 ounce
Green soap.....	1 ounce
Vaseline .....	2 ounces

Mix the naphthol and chalk and reduce to a fine powder. Melt the vaseline and soap on a water bath and stir in the powder, till cold.

**Ointment Acne.**

Resorcin .....	2 ounces
Salicylic acid.....	2 ounces
Green soap.....	3 ounces
Zinc ointment.....	3 ounces

Mix as directed in the preceding.

**Ointment Acne.**

Precipitated sulphur.....	1 ounce
Powdered starch.....	1 ounce
Zinc ointment .....	3 ounces

Mix well and apply at night.

**Ointment Acne.**

Salicylic acid.....	1 dram
Lanolin .....	1 ounce
Vaseline .....	1 ounce
Distilled water.....	½ ounce

Melt the vaseline and lanolin, stir in the water and finally the acid in fine powder.

**Camphorated Cream Salve.**

Camphor, in coarse powder	80 grains
Carbolic acid.....	60 grains
Oil of eucalyptus .....	2 fl. drams
Tincture of aconite root..	2 fl. drams
Yellow wax.....	2 av. ounces
Petrolatum .....	16 av. ounces

Melt the wax and petrolatum together, mix the camphor, carbolic acid, oil of eucalyptus and tincture of aconite and, when the camphor is dissolved, add the mixture to the melted mass while cooling. Recommended for catarrh, and whenever a soothing, healing ointment is desired.

**Ointment Elemi.**

Elemi .....	1 pound
Turpentine .....	10 ounces
Suet .....	2 pounds
Olive oil.....	2 ounces

Melt the elemi with the suet; remove from the fire and add the turpentine and oil and strain.

**Ointment, Green.**

Lard .....	1 pound
Pulverized indigo .....	16 grains
Pulverized curcuma .....	½ ounce
Alcohol .....	1 ounce

Digest on a water bath for two hours, frequently agitating, and strain through linen. While still warm mix with the following:

Yellow wax.....	2 ounces
Oil of rosemary .....	1½ drams
Oil of thyme .....	1½ drams
Oil of juniper .....	20 drops

Stir well until cold.

**Family Healing Salve.**

Thymol iodide.....	2 drams
Lanolin .....	1 ounce
Zinc ointment.....	4 ounces

Mix well.

**General Healing Salve.**

Thymol iodide.....	2 drams
Lanolin .....	1 ounce
Vaseline .....	1 ounce
Benzoated lard.....	4 ounces

Mix well.

**Ointment, Green.**

Honey and beeswax, each ½ pound; spirit turpentine, 1 ounce; wintergreen oil and laudanum, each 2 ounces; finely powdered verdigris, ¼ ounce; lard, 1¼ pounds; mix by a stove fire in a copper kettle, heating slowly.

**Pile Ointment.**

Zinc oxide.....	160 grains
Boric acid.....	160 grains
Oil of camphor.....	2 ounces
Distilled extract of witch-hazel .....	1 ounce
Lanolin .....	4 ounces

Mix.

**Ointment Resolvent.**

Lead iodide.....	75 grains
Potassium iodide.....	30 grains
Extract of belladonna .....	30 grains
Extract of opium .....	8 grains
Lard .....	12 drams

Mix. This ointment is recommended for use in cases of orchitis, to be applied night and morning.

**Ointment Sedative.**

Morphine acetate.....	2 grains
Lead carbonate.....	5 grains
Lead acetate.....	15 grains
Simple ointment.....	1 ounce

Mix well.

**Ointment Sedative.**

Lead carbonate.....	15 grains
Zinc oxide.....	2 drams
Morphine sulphate.....	2 grains
Benzoated lard.....	1 ounce

Mix.

**Ointment Sedative.**

Heroin .....	3 grains
Zinc ointment.....	1 ounce

Mix.

**Ointment Scarlet Red.**

The following formula has been found in practice to yield an ointment of good consistency, and is convenient and effective in use:

Biebrich scarlet.....	5 per cent.
Hard paraffin.....	12½ per cent.
Soft paraffin.....	82½ per cent.

Mix.

**Ointment Sulphur, Compound.**

Precipitated calcium carbonate.....	1 ounce
Sublimed sulphur.....	1½ ounces
Tar .....	1½ ounces
Green soap.....	3 ounces
Lard .....	3 ounces

Mix.

Melt tar, soap and lard together on a water bath, then add the other ingredients in fine powder. Stir till cool.

**Ointment, Sulphur Compound.**

Flowers of sulphur.....	3 drams
Zinc oxide.....	4 drams
Thymol iodide.....	½ dram
Benzoated lard.....	2 ounces

Mix.

**Ointment, Tetter.**

White precipitate.....	20 grains
Corrosive sublimate.....	10 grains
Alcohol .....	1 fl. dram
Lead acetate.....	½ dram
Lard .....	1 ounce

Dissolve the sublimate in the alcohol, add the other chemicals in fine powder and incorporate with the lard.

**Ointment, Tetter.**

Citrine ointment.....	3 drams
Spermaceti ointment.....	3 drams
Balsam of peru.....	¾ dram
Carbolic acid.....	7½ grains
Oil of lemon.....	10 minims

Mix.

**Ointment Tobacco.**

Yellow wax.....	1 ounce
Resin .....	1 ounce
Oil of myrrh.....	3 ounces

Melt and add:

Tobacco juice.....	2 ounces
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Mix well.

**Ointment Wormwood.**

Wormwood leaves.....	15 grains
Lard .....	35 grains
Camphor .....	5 grains
Opium, powdered.....	1 gram
Glycerin .....	15 grains
Petrolatum .....	30 grains

Add the wormwood to the lard and heat together for about one hour and strain. Triturate together the camphor, opium and petrolatum, and when the lard is sufficiently cooled mix together, adding the glycerin, and stir the ointment till cold.



**Cerate of Eggs.**

Yolk of one egg.  
 Yellow wax..... ½ ounce  
 Oil of sweet almond..... ½ ounces  
 Melt the wax and the oil together and add the yolk of a hard boiled egg, triturating them together.

**Cerate of Opium.**

Opium ..... ½ dram  
 Yolk of one egg.  
 Mix well and add:  
 Simple cerate..... 1 ounce  
 Mix and stir well.

**Cerate of Opium.**

Extract of opium..... 10 grains  
 Zinc ointment..... 1 ounce  
 Mix.

**Cerate Phosphorated.**

Phosphorated ether..... 5 parts  
 Simple cerate..... 24 parts  
 Mix and keep in airtight container.

**Cerate Pitch.**

Burgundy pitch..... 2 ounces  
 Suet ..... 1½ ounces  
 White wax..... 1 ounce  
 Mix with gentle heat.

**Cerate Tobacco.**

Beeswax, 3 ounces; yellow resin, 1 ounce; olive oil, 6 ounces; tobacco juice, 4 ounces; mix and evaporate to dryness, and when nearly cold add bergamot, 2 drams. Used to destroy pediculi, etc.

**Cerate Tobacco.**

Tobacco leaves..... 4 ounces  
 Alcohol ..... 6 ounces  
 Beeswax ..... 3 ounces  
 Resin ..... 1 ounce  
 Olive oil..... 4 ounces

Macerate the tobacco leaves, powdered, in the alcohol for 24 hours, then express. Put the juice in a water bath and gradually add the other ingredients, continue to heat till all the alcohol is evaporated, then take from the bath and stir till cold.

**Paint for Inflamed Joints.**

Alcohol ..... 1 ounce  
 Green soap..... 1 ounce  
 Oil of cade..... 1 ounce

Mix. Paint over the part.

**Painting on the Skin.**

Aristol ..... 1 part  
 Olive oil..... 2 parts  
 Lanolin ..... 7 parts

Mix. Dissolve the aristol in the oil and mix with the lanolin.

**Paint for Inflamed Joints.**

Croton oil..... 1 dram  
 Stronger ether..... 2 drams  
 Tincture of iodine..... 5 drams

Mix. Paint on inflamed parts once in three days.

**Paint for Inflamed Joints.**

Cantharides ..... 1 dram  
 Ether ..... ½ ounce  
 Alcohol ..... 1 ounce

Mix and macerate for 24 hours before using. Apply zinc ointment an hour after painting.

**Painting on the Skin.**

Aristol ..... 1 part  
 Flexible collodion..... 9 parts  
 Mix, and dispense in a dark-colored bottle.

**Ichthylol Paint.**

Ichthylol (ammonium sulph-  
 ichthylolate) ..... 1 dram  
 Distilled water..... 1 ounce  
 Glycerin ..... ½ ounces  
 Dextrin ..... 1 ounce

Mix by the aid of gentle heat.

Useful in acne. The paint is used in the evening, and the parts washed with warm soap water in the morning. During the day a weak solution of corrosive sublimate is used as a lotion.

**Eczema.**

Powdered camphor ..... ½ dram  
 Powdered zinc oxide..... 3 drams  
 Glycerin ..... 40 drops  
 Benzoinated lard..... 1 ounce

For external application.

**Eczema.**

Powdered iodoform..... 30 grains  
 Bismuth subnitrate..... 60 grains  
 Chloral hydrate..... 15 grains  
 Glycerin ..... 1 dram  
 Water ..... 3 fl. ounces  
 Perfume, quantity sufficient.

Mix, shake, and apply one to three times a day.

**Cracked Nipples.**

Compound benzoin tinc-  
 ture ..... 16 minims  
 Olive oil..... 2¼ fl. drams  
 Lanolin ..... 6 drams

Mix. To be applied, after nursing the child, during the first fortnight.

**Cracked Nipples.**

Tannin ..... 10 grains  
 Zinc ointment..... 1 ounce

Mix. Apply after nursing.

**Lip Salve.**

Hard paraffin..... 1 ounce  
 Soft paraffin..... 1 ounce  
 Oil of theobroma..... 1 dram  
 Glycerin ..... 1 fl. dram  
 Eosin, in fine powder.... 30 grains  
 Otto of rose..... 2 drops

Dissolve the eosin in the glycerin; melt the paraffins; mix and stir until nearly cool, adding the otto towards the end. This may be used for tinting the lips, as after well rubbing in and wiping off the excess of fat, the color is fairly permanent.

**Coral Lip Salve.**

White wax..... 70 grams  
 Vaseline ..... 100 grams  
 Alkannin ..... 0.25 gram  
 Oil of lemon ..... 1 gram  
 Oil of bergamot ..... 1 gram  
 Oil of rose ..... 0.5 gram

Mix according to art.

**Lip Salve in Sticks.**

Precipitated chalk..... 1 ounce  
 Carmine ..... 10 grains  
 Ammonia water, enough.  
 Spermaceti ..... 1 ounce  
 White wax..... ½ ounces  
 Expressed almond oil.... 4 ounces  
 Perfume, enough.

Dissolve the carmine in a sufficient quantity of ammonia water and triturate with the chalk. Melt the waxes with the oil, and when ready to set, stir in the tinted chalk and the perfume; stir well, and pour into suitable molds or containers.

#### Vanishing Cream.

Casein, 210 grains; solution of potash, 5 minims; glycerin,  $1\frac{1}{2}$  fl. drams; soft paraffin, 360 grains; carbolic acid,  $7\frac{1}{2}$  minims; zinc oxide,  $7\frac{1}{2}$  grains; camphor water, to 4 ounces. This forms a very elegant preparation, but prolonged trituration, secundum artem, is necessary. The formula may be modified as to perfume.

#### Antiseptic Skin Lotion.

Boric acid.....	2 drams
Salicylic acid.....	4 drams
Zinc sulphocarbonate.....	30 grains
Menthol .....	10 grains
Spirit of camphor.....	2 fl. ounces
Glycerin .....	4 fl. ounces
Compound spirit of lavender .....	$\frac{1}{2}$ fl. ounce

Mix.

#### Eczema Lotion.

Calamine .....	$\frac{1}{2}$ ounce
Zinc oxide.....	$\frac{1}{2}$ ounce
Glycerin .....	$\frac{1}{2}$ ounce
Dilute solution lead subacetate .....	$\frac{1}{2}$ ounce
Distilled water, to make..	3 ounces

Mix.

#### Skin Balsam, or "Emollient."

Glycerin .....	20 fl. ounces
Alcohol .....	8 fl. ounces
Otto of roses .....	8 minims
Distilled water, enough to make .....	80 fl. ounces
Solution of rosanilin, enough to give a pink tint.	

Mix.

#### Acid Bath Salt (for Obesity).

Sodium bicarbonate.....	4 parts
Sodium acid sulphate.....	6 parts
Oil of lavender, sufficient.	

Dry the salts, reduce to a fine powder and incorporate sufficient oil of lavender to perfume, usually about 1 dram to 10 pounds of mixed salts; mix thoroughly and put up in airtight containers. Four ounces of this mixture are sufficient for the average bath of 25 or 30 gallons of water, which should be as hot as can be borne.

## CORNS, BUNIONS, ETC.

#### Corns.

Moisten with a solution of boric or salicylic acid, and cover with a layer of from 4 to 5 millimeters (one-fifth to one-quarter inch) of pure crystallized salicylic acid. Apply on the top of this a bit of borated lint of four thicknesses, and finally envelop the dressing with a piece of rubber adhesive plaster. In five or six days the corn will be completely detached. Of course, the dressing must not be touched during the time.

#### Corn Cure.

Salicylic acid.....	4 drams
Alum .....	20 drams
Ether .....	10 drams
Alcohol .....	2 drams
Canada balsam.....	$\frac{1}{2}$ ounce
Flexible collodion.....	3 ounces
Carmine, to tint.	

Put up in 2-dram square bottles, with glass rod in cork. Dip the cork and bottle neck in a mixture of flake white, resin and wax.

#### Corns.

One or two applications with a camel hair pencil of a mixture of equal parts of glycerin and carbolic acid will take the pain entirely away.

#### Corns.

Pare the corns carefully with a sharp knife without drawing blood, and lightly apply the solid stick of nitrate of silver. In two or three days scrape away the hardened surface. A small, delicate, pinkish blister will be seen, which should be painted over with a 5 per cent solution of cocaine, and a small crucial incision made. Usually a head of pus will escape. Apply lead lotion dressing.

#### Corns.

Tincture of pine needles..	1 ounce
Liquor of ammonia caustic	1 ounce
Tincture of iodine.....	$\frac{1}{2}$ ounce

Mix. Also suitable for frost bites.

#### Corns.

For soft corns between the toes is recommended the application of salicylated collodion or sapo mollis 4 drams, salicylic acid, 20 grains. Mix and apply on a piece of lint every morning.

#### Corns.

Tincture of iodine.....	4 drams
Iron iodide.....	12 grains
Solution of antimony chloride .....	4 drams

Mix.

#### Corns.

Solution cocaine hydrochloride (using alcohol instead of water) 2 per cent .....	1 fl. dram
Salicylic acid.....	$\frac{1}{2}$ dram
Alcohol .....	1 dram
Fluidextract of belladonna	40 minims
Collodion .....	80 minims

Mix. Apply to the corn with a straw or other convenient means.

#### Corns.

Extract of Indian hemp..	5 grains
Salicylic acid.....	30 grains
Rectified spirit.....	$\frac{1}{2}$ dram
Ether .....	$1\frac{1}{2}$ drams
Flexible collodion.....	4 drams

Place the extract in an ounce bottle and pour the spirit on it. Shake occasionally until dissolved. Measure the ether and put the acid upon it; it will dissolve by a few stirs with the glass rod. Pour this into the bottle, mix, and add the collodion.

#### Corns.

Fluidextract of cannabis indica .....	$\frac{1}{2}$ ounce
Salicylic acid.....	1 ounce
Ether .....	2 ounces
Collodion, enough to make	1 pint

Dissolve the salicylic acid in a mixture of the ether and fluidextract and add the collodion. Put up in small bottles (one or 2 drams) with a small glass rod through the cork.

#### Corns.

Extract of cannabis indica	1 dram
Salicylic acid.....	10 drams
Oil of turpentine.....	5 drams
Glacial acetic acid.....	2 drams
Collodion .....	10 ounces

Mix and dissolve as directed in the preceding formula.

**Corns.**

Fluidextract of cannabis indica ..... 1 ounce  
 Salicylic acid..... 2 ounces  
 Alcohol ..... 4 ounces  
 Collodion, enough to make 1 pint  
 Prepare as above directed.

**Corns.**

Salicylic acid,  
 Lactic acid,  
 Collodion, of each..... 1 ounce  
 Prepare as above directed.

**Corn Collodion.**

Venice turpentine..... 1 part  
 Salicylic acid..... 10 parts  
 Collodion ..... 100 parts  
 Mix and dissolve.

**Corn Plaster.**

Salicylic acid,  
 Powdered resin, equal parts.  
 Ether, enough to make a paste.  
 Mix and spread over belladonna plaster,

**Corn Plaster.**

Melt together 8 ounces yellow wax and 2 ounces Venice turpentine, and stir in 4 drams powdered verdigris.

**Corn Plaster.**

Yellow wax..... 12 ounces  
 Venice turpentine..... 2 ounces  
 Resin ..... 1 ounce  
 Salicylic acid..... 1 ounce  
 Balsam peru..... 1 ounce  
 Lanolin ..... 2 ounces  
 Melt over a slow fire and stir till cold.

**Corn Plaster.**

Powdered galbanum..... 1 ounce  
 Turpentine ..... 10 grains  
 Sal ammoniac, in fine powder ..... 8 grains  
 Melt together and stir till cold.

**Corn Plaster.**

Adhesive plaster..... 12 ounces  
 Copper subacetate..... 1 ounce  
 Carbolic acid..... 1 ounce

Melt the plaster and acid and add the copper salt in fine powder. Stir till cold.

**Corn Plaster.**

A ring of glycerin jelly about the diameter of the corn is painted round it by a fine, but stiff, bristle paint brush. When dry, a circular piece of the strongest salicylic plaster muslin (salicylic acid 40, creosote 40) is cut to fit with the ring of jelly; the jelly is now painted over the ring and plaster, and a third coat should also be applied. When the third coat is almost dry, a layer of cotton wool is pressed on. The larger the surface covered with jelly, the less the local pressure on the corn. A single turn of soft bandage keeps the plaster in position. The dressing is changed once or twice a week, the horny layer acted on by the salicylic acid is removed, and a new dressing applied.

**Corn Plaster.**

Galbanum plaster, 1 ounce; pitch,  $\frac{1}{2}$  ounce; lead plaster, 2 drams; melt them together and add verdigris and sal ammoniac (in fine powder), of each 1 dram.

**Corn Plaster (Kennedy's).**

Beeswax, 1 pound; Venice turpentine, 5 ounces; verdigris (in fine powder),  $\frac{1}{2}$  ounces; mix by a gentle heat, and spread on cloth. It is cut into pieces, and polished.

**Corn Salve.**

Salicylic acid..... 1 dram  
 Rosin ointment..... 7 drams  
 Melt the ointment and stir in the acid.

**Corn Salve.**

Salicylic acid..... 1 dram  
 Venice turpentine..... 2 drams  
 Yellow wax..... 5 drams  
 Melt the wax and turpentine and stir in the acid.

**Corn Salve.**

Salicylic acid..... 1 ounce  
 Balsam of fir..... 5 ounces  
 Rosin ..... 6 ounces  
 Melt the rosin, add the balsam of fir and stir in the salicylic acid as it cools. This preparation can be spread on any suitable medium for a plaster.

**Corn Salve.**

Lanolin forms the basis of another salicylic acid plaster, and cocaine is added with the idea of making it painless. To form the plaster, mix 6 drams of salicylic acid thoroughly with 10 drams of lanolin. Dissolve 5 grains of cocaine in a small quantity of warm alcohol, and mix the solution with 1 fluid ounce of creosote. Mix  $\frac{1}{2}$  ounce of melted white wax with  $\frac{1}{2}$  ounce of vaseline, and add the creosote solution; to this add the cocaine solution, and mix.

**Corn Salve.**

A caustic corn salve is made by mixing a hot saturated solution of caustic soda or potassa with twice its bulk of glycerite of starch.

**Corn Salve.**

Yellow wax..... 6 ounces  
 Venice turpentine.....  $\frac{3}{4}$  ounce  
 Pure rosin.....  $\frac{1}{2}$  ounce  
 Salicylic acid.....  $\frac{1}{2}$  ounce  
 Balsam peru.....  $\frac{1}{2}$  ounce  
 Vaseline ..... 1 ounce  
 Melt over slow fire, or the best way is melt on water bath. Stir until cool.

**Corn Salve.**

Salicylic acid..... 10 parts  
 Lactic acid..... 10 parts  
 Simple cerate..... 80 parts  
 Melt together.

**Corn Salve.**

Dried sodium carbonate,  $\frac{1}{2}$  ounce; lard, 1 ounce; smalts (to color), quantity sufficient. Mix. Applied on a piece of rag, and renewed night and morning. Use for corns only.

**Corn Salve.**

Fluidextract of cannabis indica ..... 1 ounce  
 Salicylic acid..... 1 ounce  
 White cerate..... 8 ounces

Melt the cerate on a water bath, dissolve the acid in the fluidextract, adding alcohol if necessary. Mix with the liquid cerate and keep on the water bath till the alcohol is evaporated. Then stir till cold.

**Bunions.**

Carbolic acid..... 2 drams  
 Tincture of iodine..... 2 drams  
 Glycerin ..... 2 drams  
 Apply with a camel-hair pencil every day.



**Corn Salve.**

Extract cannabis indica... 1 dram  
 Lanolin ..... 1 ounce  
 Salicylic acid..... 1 ounce  
 Alcohol, enough to dissolve.  
 Cerate ..... 10 ounces

Dissolve the extract in a little alcohol, and add to the mixture of lanolin and cerate, melted on a water bath. Stir till cold.

**Bunions.**

Copper oleate..... 4 drams  
 Almond oil, enough.

Mix the oleate with the oil to form a thick paste. Apply to the bunion and cover with a bandage.

**Bunions.**

Chrysarobin .....  $\frac{1}{2}$  dram  
 Cocaine ..... 10 grains  
 Gutta-percha .....  $\frac{1}{2}$  dram  
 Chloroform ..... 5 drams

Mix and dissolve.

Pencil every night and morning over the corn or bunion.

**Bunions and Corns.**

Cocaine, alkaloid..... 1 dram  
 Salicylic acid.....  $\frac{1}{2}$  ounce  
 Gutta-percha .....  $\frac{1}{2}$  ounce  
 Chloroform ..... 4 ounces

Mix and dissolve. Apply with camel-hair pencil night and morning.

**EYE LOTIONS, SALVES, ETC.****Eye Cerate.**

Zinc oxide.....  $\frac{1}{2}$  dram  
 Simple cerate..... 1 ounce

Mix. Soak the eyelids with warm water and apply the cerate at night before retiring.

**Eye Cerate.**

Red oxide of mercury.... 15 grains  
 Lanolin ..... 1 dram  
 Cerate ..... 7 drams

Mix well. Apply at night.

**Eye Cerate.**

Yellow oxide of mercury.. 20 grains  
 Lanolin ..... 2 drams  
 Cerate ..... 10 drams

Mix well. Apply at night.

**Useful Collyrium.**

Solution of hydrogen peroxide (10 vols.)..... 4 drams  
 Tannin (pure)..... 5 grains  
 Rose water, enough to make ..... 8 fl. ounces

Mix. To make an 8-ounce collyrium, to be used 3 times a day.

**Eye Lotion.**

Corrosive sublimate..... 1 grain  
 Ammonium chloride..... 6 grains  
 Cochineal .....  $1\frac{1}{2}$  grains  
 Alcohol ..... 1 fl. dram  
 Water ..... 8 fl. ounces

Mix and filter after 12 hours.

**Eye Lotion.**

Sodium borate.....  $\frac{1}{2}$  dram  
 Camphor water..... 3 ounces  
 Mix, dissolve and filter.  
 A few drops in the eye 3 or 4 times a day.

**Sedative Eye Lotion.**

Atropine sulphate..... 2 grains  
 Wine of opium..... 2 drams  
 Zinc sulphate..... 40 grains  
 Alum ..... 40 grains  
 Cochineal coloring..... 2 drams  
 Water ..... 1 pint

Mix, and allow to stand for two days, then filter. This should be mixed with an equal volume of hot water before it is used.

**Eye Lotion.**

Zinc sulphate..... 4 grains  
 Distilled water..... 1 ounce

Mix and dissolve. Drop into the eyes 3 times a day.

**Eye Lotion.**

Zinc acetate..... 6 grains  
 Rose water..... 1 ounce  
 Camphor water..... 1 ounce

Mix and dissolve. Drop into eyes 3 times a day.

**Ophthalmic Ointment.**

White precipitate..... 1 dram  
 Zinc oxide, commercial... 2 drams  
 Armenian bole..... 2 drams  
 Lard ..... 5 ounces

Mix the first 3 ingredients and gradually add the lard.

**Pagenstecher's Ointment.**

Yellow oxide of mercury.. 15 grains  
 Vaseline ..... 2 ounces

Mix. If cold cream be substituted for vaseline a very cooling article is obtained, which is pleasant to use and very popular for inflamed eyelids.

**Golden Ointment (for the Eyes).**

Yellow mercuric oxide... 10 grains  
 Oil of cedar..... 2 minims  
 Soft paraffin..... 60 grains  
 Paraffin ointment, enough to make..... 1 ounce

Mix.

**Eye Salve.**

Mercuric oxide, yellow... 90 grains  
 Zinc oxide..... 45 grains  
 Camphor ..... 20 grains  
 Petrolatum ..... 3 troy ounces

Powder the first three ingredients, gradually add the petrolatum and mix thoroughly.

**Eye Salve.**

Morphine sulphate..... 1 grain  
 Benzoic acid..... 3 grains  
 Ammoniated mercury.....  $\frac{1}{2}$  dram  
 Zinc oxide..... 1 dram  
 White wax..... 1 dram  
 Spermaceti ..... 3 drams  
 Olive oil..... 1 ounce  
 Oil rosemary..... 1 drop

Melt the fats together on a water bath, then add the other ingredients in fine powder. Stir till cold.

**Eye Wash.**

Sodium borate..... 3 grains  
 Rose water..... 1 ounce  
 Water ..... 1 ounce

Mix. Apply beneath lids three or four times daily, after cleansing.

**Eye Wash.**

Borax, powdered..... 4 grains  
 Rose water..... 1 ounce  
 Camphor water..... 1 ounce

Apply 3 or 4 times a day.

**Eye Wash.**

Borax .....	10 grains
Boric acid, powdered.....	8 grains
Rose water.....	2 ounces
Distilled water.....	1 ounce

Mix and dissolve. Apply 3 or 4 times a day.

**Eye Wash, Alum.**

Alum .....	1 grain
Pure water.....	1 ounce

Drop gently night and morning into the eye with the tip of a feather, a pipette, or some such thing, and this will sensibly relieve inflammation.

**Eye Wash, Cocaine.**

Cocaine hydrochloride.....	4 grains
Boric acid.....	15 grains
Distilled water.....	2 ounces

Mix. Drop into the eye.

**Eye Wash, Brandy.**

Brandy .....	1 dram
Water .....	1 ounce

Mix. To be used for eyes irritable from cold. Apply frequently.

**Eye Wash, Witchhazel.**

Distilled witchhazel.....	1 ounce
Pure water.....	1 ounce

Mix. To be used especially for eyes irritable from cold. Bathe the eyes frequently with the wash.

**Eye Wash, Zinc.**

Zinc sulphate.....	1 grain
Rose water.....	1 ounce

Mix. Drop the solution gently into the eyes night and morning. For inflamed eyes.

**Eye Water.**

Copper sulphate, 10 grains; camphor mixture (julep),  $\frac{1}{2}$  pint; mix and dissolve. In the purulent ophthalmia of infants.

**Eye Water, for Inflamed, Painful Eyes.**

Cocaine hydrochloride.....	4 grains
Boric acid, powdered.....	20 grains
Rose water.....	2 ounces
Camphor water.....	2 ounces

Mix and dissolve. Drop into eyes 3 times a day.

**Eye Water.**

Distilled vinegar, 1 fluid ounce; distilled water,  $\frac{1}{2}$  pint. Mix. Half a fluid ounce of rectified spirit, or 1 fluid ounce of brandy, is often added. In simple chronic ophthalmia, blear eyes, etc., also to remove particles of lime from the eyes.

**Eye Water.**

Sugar of lead, 10 grains; pure vinegar,  $\frac{1}{2}$  teaspoonful; distilled water,  $\frac{1}{2}$  pint. Mix. In ophthalmia, as soon as active inflammation ceases; also as the last.

**Eye Water.**

Wine of opium, 2 fluid drams; zinc sulphate, 20 grains; distilled water,  $\frac{1}{2}$  pint. Mix. Astringent and anodyne; in painful ophthalmia and extreme irritability.

**Eye Water.**

Tincture of opium.....	2 drams
Sodium borate.....	10 grains
Boiling water.....	$\frac{1}{2}$ pint

Mix and filter when cold. Use freely as a wash.

**Eye Water.**

Opium, 15 grains; boiling water, 8 fluid ounces; when cold, add of solution of acetate of ammonia,  $2\frac{1}{2}$  fluid ounces, and filter.

**Eye Water.**

Zinc sulphate, 20 grains; distilled water,  $\frac{1}{2}$  pint; dissolve. An excellent astringent water in chronic ophthalmia, weak and irritable eyes, etc.

**Eye Water.**

Sodium borate.....	10 grains
Camphor water.....	2 drams
Mucilage of quince seed..	$\frac{1}{2}$ ounce
Distilled water.....	$\frac{1}{2}$ ounce

Put a few drops in the eye three or four times a day.

**Eye Water.**

Sodium borate.....	15 grains
Cocaine hydrochloride.....	8 grains
Mucilage of sassafras pith	2 ounces
Distilled water.....	6 ounces

Mix, dissolve and filter.

**Eye Water Tannic Acid.**

Tannic acid.....	1 dram
Cherry-laurel water.....	2 ounces
Distilled water.....	10 ounces

As an application in catarrhal conditions of the conjunctiva.

**Eye Water.**

Zinc sulphate.....	8 grains
Cocaine hydrochloride.....	4 grains
Rose water.....	4 ounces
Saturated solution of boric acid .....	4 ounces

Mix, dissolve and filter.

**Eye Water.**

Sodium borate.....	10 grains
Dionin .....	20 grains
Rose water.....	3 ounces
Camphor water.....	1 ounce
Distilled water, enough to make .....	8 ounces

Mix, dissolve, and filter. Very useful in inflamed and painful eyes.

**Stye.**

Wet a piece of wadding with a saturated solution of boracic acid, and drop some of this solution on the stye several times a day.

**Paint for Black Eyes.**

Bismuth subcarbonate, 2 parts; talc, 1 part; color with carmine to skin tint. Wash the part with mixture of glycerin, 1 part; water, 5 parts; dry and apply powder.

**Eye Black, How to Care for.**

Immediately after the eye has been struck with force enough to make it black, apply a cloth wet with water just as hot as can be borne; keep on applying the water for 15 or 20 minutes, and the coagulated blood will become thin and pass off into its natural channels and leave the eye perhaps swollen, but clear of blackness.

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**GOUT AND RHEUMATISM.**

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**Rheumatism.**

Wine of colchicum seed...	$\frac{1}{2}$ ounce
Tincture of digitalis.....	2 drams
Solution of potassium citrate .....	$2\frac{1}{2}$ ounces

Mix. A teaspoonful in water every six hours.

**Rheumatism.**

Wine of colchicum root....	1 ounce
Magnesium sulphate.....	1 ounce
Magnesia .....	2 drams
Peppermint water.....	10 ounces

Mix.

**Rheumatism.**

Salicylic acid.....	8 ounces
Sodium bicarbonate.....	5½ ounces
Potassium nitrate.....	3 ounces
Tincture of colchicum seed.	8 ounces
Oil of wintergreen.....	2 drams
Sugar house syrup.....	2 pints
Alcohol .....	2 pints
Water, enough to make...	1 gallon

Mix the salicylic acid with the water in a gallon bottle and gradually add the sodium bicarbonate, waiting after each addition until effervescence ceases before adding more. When all has been added and dissolved (which will require about 2 hours), add the alcohol, in which the oil of wintergreen has been previously dissolved. Then the tincture of colchicum seed and syrup, lastly the potassium nitrate, allowing to stand until the latter is dissolved; then filter. Dose for an adult, a dessertspoonful 3 times a day.

**Rheumatism.**

Sodium salicylate.....	3 drams
Wine of colchicum.....	1 dram
Water, enough to make...	8 ounces

Mix and dissolve. A tablespoonful every 3 hours.

**Rheumatism.**

Sodium salicylate.....	4 drams
Potassium iodide.....	1 dram
Wine of colchicum.....	2 drams
Peppermint water, enough to make.....	8 ounces

Mix. Dose, 2 teaspoonfuls every 3 hours.

**Rheumatism.**

Salicylic acid.....	2 drams
Solution of ammonium acetate .....	2 ounces
Distilled water.....	3 ounces
Syrup of orange peel.....	1 ounce

A tablespoonful at a dose, in water, every 2 hours.

**Alterative, Rheumatic.**

Colchicum seed and black cohosh root, of each ½ ounce, the root to be bruised; best rye whisky, 1 pint; put it together and let it stand for 3 or 4 days. Dose, from 1 teaspoonful to a tablespoonful 3 times daily before meals.

**Rheumatic Drops No. 6, Thompsonian.**

Capsicum .....	1 ounce
Myrrh .....	1 pound
Alcohol .....	1 gallon

Macerate for a week and filter. Dose, 10 to 20 drops 3 times a day.

**Rheumatic Lightning.**

Fluidextract of colchicum seed .....	64 minims
Fluidextract of cimicifuga .....	256 minims
Potassium acetate.....	128 grains
Sodium salicylate.....	256 grains
Alcohol, of 15 per cent, enough to make.....	1 pint

Mix. A tablespoonful every 3 or 4 hours.

**Rheumatic Liniment.**

Alcohol .....	10 ounces
Camphor .....	1 ounce
Chloral hydrate.....	1 ounce
Chloroform .....	1 ounce

Mix and dissolve.

**Rheumatic Liniment.**

Olive oil, spirit of camphor, and chloroform, of each 2 ounces; oil of sassafras, 1 teaspoonful. First add the oil of sassafras to the olive oil, then the spirit of camphor, and shake well before putting in the chloroform, shaking when used, and keeping the bottle corked, as the chloroform will evaporate quickly if it be left open. Apply 3 or 4 times daily, rubbing it in well and always towards the body.

**Rheumatic Liniment.**

Camphor .....	1 ounce
Chloral hydrate.....	½ ounce
Salol .....	½ ounce
Olive oil.....	1 pint

Rub the solids together till liquid and add the oil.

**Alkaline Liniment for Rheumatism.**

Olive oil.....	5 ounces
Chloroform .....	2 ounces
Ammonia .....	6 drams
Tincture of aconite root...	2 drams

Mix. This is applied to inflamed joints sufficiently often to relieve pain, bromide of potassium being given at night to secure rest.

**Squire's Rheumatic Liniment.**

Alcohol .....	1 pint
Oil of sassafras.....	2 ounces
Oil of origanum.....	2 ounces
Oil of cloves.....	1 ounce
Tincture of capsicum.....	1 ounce
Quinine sulphate.....	30 grains
Spirit of camphor.....	1 ounce

Mix. Use as directed in the preceding.

**Lithiated Potash Water.**

Lithium bicarbonate.....	13 grains
Magnesium bicarbonate...	10 grains
Potassium bicarbonate...	16 grains
Sodium chloride.....	10 grains
Carbonated water.....	16 ounces

Mix. This quantity or more should be used daily.

**Cathartic for Rheumatism.**

Sodium and potassium tartrate .....	2 ounces
Tincture of cardamom comp.	1 ounce
Peppermint water.....	1 pint

Mix and dissolve. A wineglassful every morning.

**Aulde's Rheumatic Mixture.**

Lithium bromide.....	1 ounce
Solution of potassium citrate .....	4 ounces
Syrup of tolu.....	2 ounces

Mix. A teaspoonful in plenty of water after each meal.

**Rheumatic Pills.**

Extract of colocynth compound .....	1½ grains
Extract of colchicum acetic .....	1 grain
Extract of hyoscyamus....	½ grain
Calomel .....	½ grain

For 1 pill. Mix.

Give one pill every night and a dose of the above "cathartic for rheumatism" in the morning.

**Lallemand's Specific for Rheumatism.**

Acetic extract of colchicum .....	15 grains
Aqueous extract of opium..	15 grains
Potassium iodide.....	4 drams
Potassium acetate.....	2 drams
Distilled water.....	3½ ounces
White wine.....	½ ounce

Mix. Twenty drops three times daily.



**Spice Plaster.**

Powdered capsicum .....	2 ounces
Powdered cinnamon .....	2 ounces
Powdered cloves.....	2 ounces
Rye meal,	
Alcohol,	
Honey, of each, sufficiency.	

To be made into a cataplasm by trituration on a plate, and spread upon a close fabric. The plaster should be made up extemporaneously when required.

**Liquid Spice Plaster.**

Capsicum .....	4 drams
Cloves .....	4 drams
Cinnamon .....	4 drams
Ginger .....	4 drams

Exhaust with stronger alcohol, evaporate to 4 ounces, and add to a solution of

Rosin .....	9 ounces
Venice turpentine.....	7 ounces
Alcohol (95 per cent.).....	12 ounces

Mix. Spread with a camel-hair brush on paper, cover with muslin, and apply in lumbago, muscular rheumatism, pain in chest, etc., over place of pain.

**Anti-Rheumatic Syrup.**

Potassium iodide.....	1½ drams
Sodium salicylate.....	6 drams
Syrup of opium.....	3 ounces
Syrup of bitter orange peel	8 ounces

Mix and dissolve. Dose for adults, a tablespoonful three or four times in 24 hours.

**Gout and Rheumatic Mixture.**

Salicin .....	80 grains
Colchicum wine.....	80 minims
Potassium acetate.....	2 drams
Tincture of cardamom.....	½ ounce
Chloroform water, enough to make .....	6 ounces

Make a mixture.

A sixth part of this to be taken at 12 noon and 4 p. m.

**Gouty Rheumatism.**

Wine of colchicum seed....	½ dram
Potassium acetate.....	5 drams
Potassium iodide.....	5 drams
Tincture of black cohosh..	5 drams
Peppermint water, enough to make .....	4 fl. ounces

Mix. Teaspoonful every four hours.

**Gouty Rheumatism.**

Salol .....	1 dram
Potassium iodide.....	3 grains

Powder and mix. Put into 12 capsules. Give one every 3 hours.

**Gouty Rheumatism.**

Aspirin .....	10 grains
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Take at one dose. One dose every 3 hours.

**Gout Liniment.**

Oil of wintergreen.....	1 ounce
Olive oil.....	1 ounce
Soap liniment.....	1 ounce
Tincture of aconite.....	1 ounce
Tincture of opium.....	1 ounce

Mix. Shake before using.

**Gout Liniment.**

Ethereal tincture of capsicum .....	1 ounce
Spirit of ammonia.....	1 ounce
Oil of turpentine .....	1 ounce
Oil of linseed .....	1 ounce

Mix.

**Liniment for Chronic Gout.**

Ethereal tincture of capsicum .....	1 ounce
Spirit of ammonia.....	1 ounce
Oil of linseed .....	1 ounce
Oil of turpentine .....	1 ounce
Tincture of opium.....	1 ounce
Oil of sassafras.....	1 ounce

Mix well.

**Gout Liniment.**

Methyl salicylate.....	2 ounces
Turpentine .....	1 ounce
Olive oil.....	5 ounces

Mix.

**Gout Liniment.**

Methyl salicylate,	
Olive oil, of each, 4 ounces.	

Mix.

**Gout Liniment.**

Methyl salicylate.....	2 ounces
Camphor .....	1 ounce
Olive oil, enough to make	8 ounces

Mix and dissolve.

**Gout Paper.**

Cantharides .....	15 parts
Euphorbium .....	4 parts
Strong alcohol.....	240 parts

Mix. Digest a few days, filter and add pitch, 180 parts. Dissolve with gentle heat and add Venice turpentine, 6 parts; and enough tar to color the mixture brown. This is spread two or three times on tissue paper by means of a sponge, and when dry the back of the paper is covered with oil of lavender.

**Gout Paper, Transparent.**

Tissue paper is covered with a solution of 1 part amber-lac and 6 parts benzoin; when dry the following is applied:

Euphorbium .....	30 parts
Cantharides .....	15 parts
Stronger alcohol.....	300 parts

Digest three days, filter, and add Venice turpentine, rosin and pitch, of each 15 parts. If necessary, this solution may be diluted with more stronger alcohol; it should be applied with a broad brush.

**White's Gout Pills.**

Calomel .....	1 dram
Powdered socotrine aloes..	1 dram
Ipecac .....	1 dram
Acetic extract of colchicum	1 dram

Make a mass with syrup and form into 60 pills.

**Gout Powder.**

Bryonia root.....	18 grams
Gentian .....	18 grams
Chamomile .....	10 grams
Colchicum root.....	20 grams
Betony .....	50 grams

Mix and make into 365 powders, one of which is taken each day in a full glass of cold or hot water.

**Gout Powders.**

Sodium salicylate.....	4 drams
Powdered extract of colchicum .....	7 grains
Powdered extract of cimicifuga .....	15 grains
Sugar of milk.....	1 ounce

Mix and make into 30 powders and give 1 powder in a glass of water 3 times a day.

**Gout and Rheumatism.**

Internal medication for gout and rheumatism may be supplemented by active local measures, such as raising the affected limb and surrounding it with hot, moist flannels. Wrapping the hands in flannel dripping with water, and covering them with a water-proof bag, is useful to dissolve gouty deposits, etc.

**Gout and Rheumatic Mixture.**

Lithium citrate.....	60 grains
Potassium bicarbonate.....	60 grains
Potassium iodide.....	30 grains
Sodium salicylate.....	120 grains
Wine of colchicum.....	2 fl. drams
Distilled water, enough to make .....	8 fl. ounces

Mix and dissolve.

## GARGLES, CROUP, DIPHTHERIA, ETC.

**Gargle.**

Tincture of capsicum.....	1 dram
Potassium chlorate.....	3 drams
Glycerin .....	16 drams
Dilute hydrochloric acid.....	3 drams
Rose water, enough to make .....	12 ounces

Mix.

**Antidiphtheritic Gargle.**

Benzoic acid.....	1 dram
Purified fusel oil (amylic alcohol) .....	3 drams
Alcohol .....	8 ounces

Mix, and add:

Cinnamon water.....	8 ounces
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Add 1 tablespoonful to 2 tablespoonfuls of warm water.

**Antiseptic Gargle.**

For sterilizing the mouth after the teeth have been cleaned with a toothbrush and soap:

Thymol .....	3½ grains
Benzoic acid.....	45 grains
Tincture of eucalyptus.....	180 grains
Water .....	16 ounces

Mix the first three ingredients, rub them with a little talc powder and gradually add the water. Shake well and filter.

**Yellow Gargle.**

Tincture of iron.....	2 drams
Glycerin .....	2 ounces
Potassium chlorate.....	2 drams
Water, enough to make....	1 pint

Mix and dissolve.

**Yellow Gargle, Strong.**

Tincture of iron.....	1 ounce
Potassium chlorate.....	½ ounce
Glycerin .....	2 ounces
Water, enough to make....	1 pint

Mix and dissolve.

**Compound Potassium Chlorate Gargle.**

Potassium chlorate.....	1½ drams
Aluminum sulphate.....	1½ drams
Glycerin .....	1 ounce
Dilute hydrochloric acid.....	2 drams
Solution of morphine hydrochlorate .....	8 ounces

Dissolve the potassium chlorate and alum in 4 ounces of water, add the other ingredients, and make up to 16 ounces with water. Use frequently. Astringent, antiseptic and sedative.

**Bell's Gargle.**

Sodium borate.....	2 drams
Yeast .....	½ ounce
Honey .....	½ ounce
Boiling water.....	7 ounces

Mix, let stand 24 hours, and filter.

**Sage Gargle.**

Infusion of sage.....	1 pint
Diluted sulphuric acid....	2 drams
Honey of roses.....	1 ounce

Mix. In relaxation of the uvula, etc.

**Sage Gargle.**

Infusion of sage.....	2 pints
Tincture of Peruvian bark	½ fl. ounce
Syrup of mulberries.....	½ fl. ounce
Spirit of horseradish.....	1 dram

Mix. More active than the preceding formula.

**Gargle Sage Compound.**

Alum .....	4 drams
Sage .....	1 ounce
Honey .....	2 ounces
Boiling water.....	1 pint

Make an infusion and strain, dilute with water to make one pint and use as a gargle.

**Sage Water Concentrated.**

Sage .....	5 ounces
Water, sufficient.	

Macerate and distill 5 ounces.

Sage water is made by diluting 1 part of this with 9 parts of distilled water.

**Gargle for Sore Throat.**

Ammoniated tincture of guaiac .....	3 drams
Solution of potassa.....	3 drams
Tincture of opium.....	2 drams
Cinnamon water, enough to make .....	8 ounces

Mix. To be used every hour.

**Gargle for Sore Throat.**

Ammoniated tincture of guaiac .....	½ ounce
Potassium chlorate.....	2 drams
Honey .....	4 ounces
Water, enough to make....	8 ounces

Mix the tincture, potassium chlorate and honey in a mortar intimately, gradually add the water. Use every 2 hours.

**Gargle for Sore Throat.**

Tincture of cinchona comp.	¼ ounce
Tincture of guaiac ammoniated .....	¼ ounce
Potassium chlorate.....	2 drams
Honey .....	4 ounces
Rose water, enough to make .....	1 pint

Mix as directed in the preceding formula. Use every hour.

**Diphtheria.**

Spirit turpentine.....	1 dram
Potassium chlorate.....	2 drams
Simple syrup.....	1 ounce
Water, distilled.....	2 ounces

Mix and add:

Tincture of ferric chloride	½ ounce
Hydrochloric acid.....	1 dram

Mix. Dose, ½ to 1 teaspoonful every 2 or 3 hours, in a little water; swallow slowly.

**Diphtheria.**

Camphor .....	5 drams
Castor oil.....	4 drams
Alcohol .....	2½ drams
Phenic acid (crystals).....	4 scruples
Tartaric acid.....	16 grains

Mix. Apply locally with brush.

**Diphtheria and Croup.**

Pilocarpine .....	13 grain
Ammonium carbonate.....	30 grains
Potassium chlorate.....	45 grains
Syrup of senega.....	1 fl. ounce
Cognac .....	5 fl. drams
Water .....	5 fl. ounces

Mix. A spoonful every hour until the patient begins to perspire.

**Laryngeal Diphtheria.**

Oil of turpentine.....	1 ounce
Oil of eucalyptus.....	1 ounce
Petrolatum .....	6 ounces

Mix. Use in a steam atomizer every half hour.

**Menthol in Diphtheria.**

Menthol rubbed up with sugar, 1 to 20 or 1 to 10. Apply with a large camel-hair brush, the membrane being as far as possible rubbed off, and the menthol brought directly in contact with the underlying surface. Solutions do not answer so well, as the membrane cannot be so completely rubbed off as with the powder. Apply 3 or 4 times daily.

**Croup.**

Syrup of ipecac.....	9 drams
Compound syrup of squill 1½ ounces	
Camphorated tincture of opium .....	2 ounces

Mix. Dose, half teaspoonful every 3 or 4 hours.

**Croup.**

Mucilage of acacia.....	2 ounces
Balsam copaiba.....	1 dram
Fluidextract of ipecac.....	1 dram
Potassium iodide.....	1 dram
Powdered potassium chlorate .....	1 dram

Mix and dissolve. A teaspoonful every 3 hours.

**Protracted Croup.**

Potassium iodide.....	2½ drams
Tincture of blood root....	4 drams
Syrup of squill, compound 1½ ounces	
Camphorated tincture of opium .....	2 ounces

Mix. Teaspoonful every 4 hours.

**Croup.**

Tincture of sanguinaria....	3 drams
Wine of ipecac.....	1½ drams
Wine of antimony.....	1½ drams
Heroin hydrochloride.....	1 grain
Syrup of wild cherry, enough to make.....	4 ounces

Mix. A teaspoonful for a small child.

**Croup.**

Wine of ipecac.....	2 drams
Tincture of sanguinaria....	2 drams
Tincture of opium, camphorated .....	1 ounce
Water, enough to make....	4 ounces

Mix. A teaspoonful every 3 hours.

**Spray Solution for Croup.**

Sodium bicarbonate.....	120 grains
Sodium borate.....	120 grains
Water .....	2 ounces

Mix and dissolve. Use in an atomizer.

**Spray for Croup.**

Potassium chlorate.....	2 drams
Sodium borate.....	1 dram
Rose water.....	3 ounces

Mix, filter and use in an atomizer every hour.

**Spray for Croup.**

Tannic acid.....	45 grains
Potassium chlorate.....	2 drams
Glycerin .....	½ ounce
Water, enough to make....	4 ounces

Mix, dissolve, filter. Use in an atomizer every 2 hours.

**Spray for Croup.**

Potassium chlorate.....	2 drams
Tannic acid.....	1 dram
Glycerin .....	1 ounce
Heroin hydrochloride.....	1 grain
Water, enough to make....	4 ounces

Dissolve and filter. Use in an atomizer 2 hours.

**Sore Mouth in Children.**

Potassium chlorate.....	30 grains
Honey .....	2 drams
Water, enough to make....	2 ounces

Mix. Wash the mouth several times a day, using a soft rag.

**Sore Mouth.**

Borax .....	1 dram
Potassium chlorate.....	½ dram
Honey .....	2 ounces
Water .....	1 ounce

Mix. Use as a mouth wash every 3 hours.

**Sore Mouth.**

Borax .....	1 dram
Potassium chlorate.....	1 dram
Glycerin .....	1 ounce
Rose water, enough to make .....	4 ounces

Mix. Use 3 or 4 times a day.

**Mucus Patches in the Mouth.**

Boric acid.....	2 drams
Glycerin .....	2 ounces
Tincture of myrrh.....	1 ounce
Rose water, enough to make .....	8 ounces

Mix. As a gargle.

**Mucus Patches in the Mouth.**

Borax .....	1½ drams
Sodium bicarbonate.....	30 grains
Thymol .....	3 grains
Glycerin .....	1 ounce
Cherry-laurel water, enough to make.....	4 ounces

Mix, shake and filter. Use as a gargle.

**Sore Patches in the Mouth.**

Sodium baborate.....	1 dram
Sodium bicarbonate.....	1 dram
Glycerin .....	1 ounce
Tincture of myrrh.....	1 ounce
Rose water, enough to make .....	8 ounces

Mix, dissolve and filter. Use as a gargle every 3 hours.

**Sore Mouth.**

Tincture of myrrh.....	2 drams
Potassium chlorate.....	½ dram
Sodium baborate.....	1 dram
Honey .....	2 ounces
Rose water, enough to make .....	4 ounces

Mix well. Use every 2 hours, applying with a brush.



**La Grippe.**

Salol .....	3 scruples
Phenacetin .....	2 scruples
Quinine salicylate.....	1 scruple

Make in 20 capsules, 2 to be taken every 3 hours.

**La Grippe.**

Quinine salicylate.....	1 grain
Extract of belladonna.....	1-33 grain
Arsenous acid.....	1-125 grain

Make 1 capsule. Take one every 4 hours.

**La Grippe.**

Antipyrine .....	1 dram
Cocaine hydrochloride.....	½ dram
Rose water.....	8 ounces

Mix. Use as a spray for nose and throat.

**La Grippe.**

Salol .....	1 dram
Phenacetin .....	1 dram
Heroin .....	1 grain
Extract of cascara sagrada	1 dram

Make into 30 capsules. One or two every 3 hours.

**La Grippe.**

Cinchonidine salicylate....	1 dram
Salol .....	1 dram
Phenacetin .....	½ dram
Camphor .....	15 grains

Make into 30 capsules. One or two every 3 hours.

**La Grippe.**

Quinine sulphate.....	30 grains
Salol .....	30 grains
Phenacetin .....	60 grains
Powdered ipecac.....	2 grains

Make into 30 capsules. One or two every 2 hours.

**La Grippe.**

Quinine sulphate.....	30 grains
Phenacetin .....	90 grains
Powdered ipecac.....	3 grains
Heroin .....	1 grain
Camphor .....	15 grains

Make into 30 capsules. One or two every 4 hours.

**VERMIFUGES.****Worm Cakes (Storey's).**

Take of calomel and cinnabar, of each 24 grains; powdered jalap, 72 grains; ginger, 1 dram; white sugar, 1½ ounces; syrup, quantity sufficient; mix and divide into a dozen cakes.

**Injection for Seat Worms.**

For children:

Olive oil.....	1 to 2 ounces
Naphthalene .....	15 to 25 grains

To be repeated for eight days.

**Injection for Seat Worms.**

Warm soap suds.....	2 ounces
Naphthalene, in fine powder .....	20 grains

Mix well. Inject once a day.

**Worm Powders.**

Santonin .....	10 grains
Podophyllin resin.....	4 grains
Powdered rhubarb.....	15 grains
Sugar of milk.....	30 grains

Mix, and divide into 15 powders. Give one powder 5 hours apart (on an empty stomach), until 3 have been given.

Omit a day, repeating the dose if necessary.

**Worm Powders, Collier.**

Powdered jalap and scammony, of each 1 dram; cream tartar, 2 drams; Ethiops mineral, 3 drams. Mix well and divide into 30 powders. Give one twice a day.

**Worm Powders.**

Santonin .....	10 grains
Calomel .....	15 grains
Scammony, resin, powdered	15 grains
Powdered sugar.....	30 grains

Mix, and divide into 15 powders. Give one 3 times daily (on an empty stomach) for one day and repeat in 3 days if necessary.

**Worm Powders.**

Calomel .....	3 grains
Santonin .....	¼ grain
Powdered rhubarb.....	5 grains

Mix. For one powder.

**Worm Powders.**

Calomel .....	10 grains
Santonin .....	5 grains
Sugar of milk.....	25 grains

Mix and make into 5 powders. One every morning after fasting.

**Compound Santonin Powder.**

Santonin .....	10 grains
Calomel .....	3 grains
Resin, jalap.....	1 grain

Mix. For 3 or 6 powders.

**Compound Santonin Powder.**

Santonin .....	15 grains
Calomel .....	10 grains
Podophyllin .....	1 grain
Sugar of milk.....	100 grains

Mix and divide into 10 powders. One every morning and night.

**Ringworm.**

Ammoniated mercury.....	1 dram
Flowers of sulphur.....	1 dram
Vaseline .....	1 ounce

Apply to parts affected once or twice a day.

**Ringworm.**

Oil of rose geranium.....	2 drops
Borax .....	2 drams
Glycerin .....	2 drams

To be rubbed over the spot two or three times daily.

**Ringworm.**

Ointment of nitrate of mercury .....	2 drams
Vaseline .....	2 drams

Mix and rub on the parts affected.

**Ringworm.**

Citrine ointment.....	3 drams
Sulphur .....	1 dram
Vaseline .....	4 drams

Mix and apply with massage.

**Ringworm.**

Citrine ointment.....	3 drams
Ichthyol .....	1 dram
Vaseline .....	4 drams

Mix and apply.

**Worm Syrup.**

Fluidextract of spigelia ..	5 ounces
Fluidextract of senna ....	3 ounces
Oil of anise.....	10 minims
Oil of caraway.....	10 minims
Syrup .....	8 ounces

Mix.

Dose: One or more teaspoonfuls at intervals until purging commences.

**Chenopodium Worm Syrup.**

Oil of chenopodium.....	1 fl. ounce
Alcohol .....	1 fl. ounce
Spirit of ammonia, aromatic .....	½ fl. ounce
Essence of gaultheria.....	2 drams
Syrup of rhubarb, aromatic,	
Simple syrup, equal parts,	
of each, to make.....	1 pint

Mix.

Dose:

Child 1 to 2 years.....	½ dram
Child 2 to 4 years.....	1 dram
Child 5 to 8 years.....	1½ drams
Child 8, up.....	2 drams

Three times a day, on an empty stomach, until 3 doses have been taken, then omit one day.

**Worm Syrup.**

Fluidextract of spigelia ..	2 ounces
Fluidextract of senna ....	½ ounce
Fluidextract of podophyl- lum .....	1 dram
Aromatic syrup of rhu- barb, enough to make..	8 ounces

Mix. Dose: Same as given in the oil of chenopodium worm syrup given above.

**Worm Syrup, for Thread Worms.**

Santonin .....	60 grains
Podophyllin .....	8 grains
Oil of peppermint.....	5 drops
Aromatic spirit of am- monia .....	½ fl. ounce
Dilute alcohol.....	4 n. ounces

Dissolve and add a mixture of equal volumes of simple syrup and water to make 10 fluid ounces.

**Taenifuge for Children.**

Male-fern extract.....	1 dram
Calomel .....	3 grains
Powdered gelatin,	
Powdered sugar, of each, quantity sufficient.	

For one electuary. To be taken before breakfast.

The day preceding the administration the child should take nothing but milk; in the evening of the same day an emetic of senna infusion is given, followed a few hours later by an injection of plain water. The next day the child takes the confection. If the expulsion of the worm is tardy, a salt water clyster is given (salt, 1½ ounces; water, 7 ounces) two or three hours after the ingestion of the taenifuge.

**Tape Worm Remedy.**

Oleoresin of male fern... 45 minims
Tincture of vanilla..... 45 minims
Powdered acacia..... ½ dram
Distilled water..... 1 ounce

Take the entire amount after fasting, and follow in two hours by full dose of castor oil or sulphate of magnesium.

**Tape Worm Remedy.****(Compound Pomegranate Vermifuge.)**

Pomegranate, bark of root 4 ounces

Make infusion in 8 ounces water by allowing to stand 3 hours. Strain and evaporate to 3 ounces.

Add this solution to the following:

Croton oil.....	1 drop
Ether .....	1 dram
Oleoresin of male fern...	2 drams
Honey .....	1½ ounces

Feed patient on pumpkin seed and lemon juice for 3 or 4 days, then give the above mixture in 3 doses, 15 minutes between each dose. In about an hour give dose of castor oil.

**Mosler's Tape Worm Bolus.**

Kousso flower.....	1 ounce
Kamala .....	½ ounce
Oleoresin of male fern....	1 dram
Honey, quantity sufficient.	

Mix and divide into 60 boluses, which may be sprinkled over with powdered cinnamon, and of which 30 should be taken in the evening and 10 or 20 more the following morning.

**Worm Tea.**

Spigelia .....	4 drams
Senna .....	3 drams
Aniseed .....	1 dram
Boiling water.....	16 ounces

Infuse for an hour. Dose, from 1 to 2 table-spoonfuls every 3 hours.

**Worm Tea.**

Spigelia .....	240 grains
Manna .....	240 grains
Senna .....	120 grains
Fennel .....	60 grains

Cut the spigelia and mix with the other ingredients; infuse in 16 fluid ounces of boiling water. Give a child, 2 years old or upwards, half a teacupful, warm, morning, noon and night, before eating.

**Worm Tea.**

Senna .....	½ ounce
Manna .....	½ ounce
Spigelia .....	½ ounce
Fennel seed.....	1 dram
Wormseed .....	½ dram
Savin .....	2 scruples
Potassium bitartrate.....	2 scruples

Mix and put into 1 package.

Directions: Pour on to this 1 quart of boiling water, and let digest for 10 or 15 minutes; of the clear liquor, sweetened, give to children 2 years old and upwards a small teacupful, warm, morning, noon and night, on an empty stomach. It may be given 3 or 4 days successively, if necessary.

**Worm Tea.**

Wormseed .....	1 ounce
Senna .....	¼ ounce
Manna .....	½ ounce
Anise .....	1 ounce
Boiling water.....	1 pint
Sugar .....	4 ounces

Infuse the drugs in the water for 1 hour. Strain, add the sugar, and enough water to make a pint. Give one-half at night and one-half in the morning.

**Vermifuge.**

Alexandria senna.....	1 pound
Pink root.....	2 pounds
Potassium carbonate.....	1 ounce
Santonin .....	3 ounces
Oil of caraway .....	1½ drams
Oil of anise .....	1½ drams
White sugar.....	6 pounds
Alcohol .....	1 pint
Water, enough to make...	1 gallon

Infuse the drugs in ½ gallon of boiling water. Express, add the other ingredients, shake till dissolved, and then add enough water to make 1 gallon. Let stand and bottle the clear liquid. Dose, as described in "chenopodium worm syrup."

**Worm Tea.**

Pink root.....	½ ounce
Wormseed .....	½ ounce
Senna .....	2 drams
Fennel seed.....	4 drams
Coriander seed.....	2 drams
Honey .....	4 ounces
Water, enough to make...	1 pint

Infuse the drugs in 1 pint of boiling water for 1 hour, strain, add the honey and enough water to make 1 pint. Give one-half at night and one-half in the morning.

**Troches Santonin.**

Santonin, in fine powder. ½ troy ounce
Sugar, in fine powder... 18 troy ounces
Tragacanth, in fine powder .....
Orange flower water, a sufficient quantity.

Rub the powders together until they are thoroughly mixed, then with orange flower water form a mass, to be divided into 480 troches.

**Troches of Sodium Santoninate.**

Sodium santoninate, in fine powder .....	100 grains
Sugar, in fine powder...	2,000 grains
Tragacanth, in fine powder .....	50 grains

Orange flower water, a sufficient quantity. Rub the powders together until they are thoroughly mixed; then with the orange flower water form a mass, to be divided into 100 troches. When intended for domestic use, the lozenges of both santonin and sodium santoninate are often made to contain less of the drug than is directed in the foregoing formulas; and the mass is mixed with white of egg, colored pink with cochineal mixture, and squeezed from a horn so as to form "drops" like the comfits of the confectioner. The lozenges should not be exposed to the light.

**Vermifuge Lozenges.**

Santonin, 60 grains; pulverized sugar, 5 ounces; mucilage of gum tragacanth, sufficient to make into a thick paste, worked carefully together, that the santonin shall be evenly mixed throughout the whole mass; then cover up the mortar and let stand from 12 to 24 hours to temper; at which time they will roll out better than if done immediately; divide into 120 lozenges. Dose for a child, 1 year old, 1 lozenge night and morning; of 2 years, 2 lozenges; of 4 years, 3; of 8 years, 4; of 10 years or more, 5 to 7 lozenges; in all cases to be taken twice daily, and continuing until the worms start.

**Pediculi Pubis, or "Crabs."**

Dilute acetic acid.....	500 parts
Corrosive sublimate.....	1 part

Mix. The poisonous nature of the wash must not be forgotten.

**Soldiers' Salve for Pediculi (Martiatum Unguentum Pediculi).**

White precipitate.....	15 drams
Wax ointment.....	150 drams
Lard .....	150 drams
Carbolic acid .....	5 drams
Oil of cloves .....	5 drams
Oil of bergamot .....	5 drams

Mix thoroughly. For head and body lice, scabies, etc.

**Salve for Pediculi.**

Mercury ointment.....	½ ounce
Lard .....	½ ounce
Oil of eucalyptus.....	½ dram

Mix well.

**Wash for Pediculi.**

Corrosive sublimate.....	15 grains
Tincture of larkspur.....	8 ounces
Diluted alcohol.....	8 ounces

Mix well. Mark "Poison."

This is a very simple and effective remedy.

**Wash for Pediculi.**

Powdered larkspur seed..	½ pound
Corrosive sublimate.....	2 drams
Acetic acid.....	½ pound
Alcohol .....	1 pint
Water, enough to make...	1 gallon

Mix the larkspur, acid, alcohol and ½ gallon water. Let stand 3 days, shaking often. Filter and pass enough water through the filter to make a gallon. Dissolve the corrosive sublimate in it. If desired, this preparation can be colored pink by adding 1 or 2 drams of powdered cochineal to the larkspur before infusing.

**DIARRHOEA REMEDIES.****Blackberry Balsam.**

Rose leaves.....	2 drams
Cloves .....	1½ drams
Cinnamon .....	1½ drams
Mace .....	1 dram
Alcohol .....	4 ounces
Water .....	12 ounces

Percolate until 1 pint is obtained, and add:

Fluidextract of blackberry root .....	2 ounces
Sugar .....	20 ounces

Mix and dissolve. Dose, one tablespoonful every 2 hours.

**Blackberry Cordial.**

Blackberry juice.....	3 pints
Cinnamon, coarse powder.	2 troy ounces
Cloves, coarse powder....	½ troy ounce
Nutmegs .....	½ troy ounce
Diluted alcohol.....	2 pints
Syrup .....	3 pints

Percolate the powdered spices, previously well mixed, with diluted alcohol to obtain 2 pints of tincture, and add this to the 3 pints of blackberry juice, then add 120 grains of purified talcum, set the mixture aside for 12 hours, or longer if convenient, occasionally shaking, then filter, to the filtrate add the syrup.

**Blackberry Cordial.**

Fluidextract of blackberry root .....	2 ounces
Aromatic elixir.....	16 ounces
Syrup .....	6 ounces

Mix and filter. One-half tablespoonful every 3 hours.

**Diarrhoea Cordial.**

Fluidextract of ipecac.....	2 drams
Tincture of opium.....	1 ounce
Tincture of rhubarb, aromatic .....	1 ounce
Tincture of opium, camphorated .....	1 ounce
Syrup .....	1 ounce
Alcohol .....	1 ounce
Fluidextract of logwood...	½ ounce
Fluidextract of blackberry root .....	½ ounce

Mix. Dose, a teaspoonful every 3 hours.

This cordial should not be given to small children, on account of its strong opium content.



**Confection Acorns.**

Powdered acorns .....	3 ounces
Powdered red coral.....	1½ ounces
Powdered catechu .....	1½ ounces
Confection of dog rose....	10 ounces
Syrup of red roses, sufficient.	

Mix. One dram every four hours, in chronic diarrhoea.

**Neutralizing Cordial.**

Rhubarb, coarsely powdered .....	2 ounces
Potassium carbonate.....	2 ounces
Golden seal.....	1 ounce
Cinnamon .....	1 ounce
Sugar .....	4 pounds
Brandy .....	1 gallon
Oil of peppermint.....	20 minims

Macerate the rhubarb, golden seal and cinnamon in half a gallon of the brandy for 6 hours at a gentle heat, transfer to a percolator and displace first with the remainder of the brandy, and afterward with enough water to complete 1 gallon of the percolate. To this add the potassium carbonate, sugar, and the oil of peppermint previously rubbed with enough sugar to absorb it. When the sugar is dissolved, filter through paper. The substitution of diluted alcohol for brandy to exhaust the drugs affords a preparation less pleasant, but less expensive and quite as efficient.

**Neutralizing Cordial.**

Rhubarb, coarsely powdered .....	2 ounces
Golden seal, coarsely powdered .....	1 ounce
Krameria, powdered.....	2 drams
Catechu, powdered.....	4 drams
Potassium carbonate.....	1 ounce
Aromatic elixir, enough to make .....	1 gallon

Macerate for 4 days, shaking often. Filter and pass enough elixir through the filter to make 1 gallon. Dose: ½ to 1 tablespoonful.

**Neutralizing Cordial.**

Fluidextract of rhubarb ...	2 ounces
Fluidextract of hydrastis ..	½ ounce
Tincture of catechu .....	2 ounces
Tincture of kino .....	1 ounce
Aromatic elixir, enough to make .....	1 gallon

Mix and filter.

**Chronic Diarrhoea.**

Lactic acid.....	1 dram
Syrup .....	2½ ounces
Water .....	10 ounces

Mix and take a teaspoonful every hour.

**Chronic Diarrhoea.**

Sour milk, prepared with lactic acid bacillus (bacillus Metchnikoff) is claimed to be a good remedy for obstinate diarrhoea and flatulency. Take a glass twice a day between meals.

**Diarrhoea Mixture.**

Tincture of capsicum.....	1 fl. dram
Spirit of peppermint.....	2 fl. drams
Tincture of opium.....	3 fl. drams
Tincture of catechu compound .....	4 fl. drams
Tincture of kino .....	4 fl. drams
Tincture of krameria .....	4 fl. drams
Spirit of camphor.....	4 fl. drams
Water .....	4 fl. drams

Mix and filter. Dose, 30 to 60 minims.

**Lozenges for Diarrhoea, Cholera, Etc.**

Pure carbolic acid, 1 part; bismuth subcarbonate, 20 parts; compound powder of chalk with opium, 40 parts; powdered tragacanth, 6 parts; oil of cinnamon, 1 part; tincture of cayenne, 3 parts; syrup, a sufficient quantity. Mass, and divide into pieces, each to weigh 20 grains; bake with a gentle heat. Dose, one every 2, 3 or 4 hours, according to urgency of the symptoms.

**Diarrhoea Mixture, Acid.**

Sulphuric acid, aromatic..	2 fl. drams
Tincture of opium.....	2 fl. drams
Water, quantity sufficient to .....	3 fl. ounces

Mix. Dose: A fluid dram every four hours in water.

**Aromatic Mixture (for Infants).**

Aromatic confection.....	2 drams
Magnesium carbonate.....	24 grains
Tincture of rhubarb.....	2 fl. drams
Peppermint water, enough to make.....	3 fl. ounces

Mix. Carminative, antacid and stomachic. Dose, ½ to 2 teaspoonfuls, according to age, three or four times daily.

**Dunlap's Diarrhoea Mixture.**

Tincture of opium .....	½ ounce
Tincture of camphor .....	½ ounce
Tincture of peppermint ...	3 ounces
Tincture of ginger .....	3 ounces
Tincture of capsicum .....	½ ounce
Hoffman's anodyne.....	½ ounce

Mix. Dose, a teaspoonful diluted with sweetened water, after each motion. This is particularly recommended for cholera morbus.

**Diarrhoea Mixture.**

Tincture of opium.....	2 drams
Spirit of camphor.....	1 dram
Bismuth subnitrate.....	½ ounce
Carbolic acid.....	15 drops
Peppermint water, enough to make.....	4 ounces

Mix. Shake and take a teaspoonful every 2 hours.

**Diarrhoea Powder.**

Tannic acid.....	1 grain
Powdered opium.....	¼ grain
White sugar.....	10 grains

For 1 powder. Take one every two hours.

**Diarrhoea Syrup.**

Powdered gum arabic....	½ ounce
Distilled cinnamon water.	½ ounce
Distilled mint water.....	½ ounce
Syrup of quinces.....	½ ounce
Extract of opium.....	1 grain

The combination is mixed with a half a tumbler of water when wanted for use, and of the mixture a tablespoonful taken every hour.

**Summer Diarrhoea.**

Zinc oxide.....	1 dram
Sodium bicarbonate.....	½ dram
Tincture of krameria.....	½ dram
Syrup of chloroform.....	3 drams
Water .....	2 ounces

Mix. Tablespoonful every half hour.

**Syrup Blackberry.**

Syrup .....	½ gallon
Fluidextract of blackberry	4 ounces

Mix. Dose: One or two tablespoonfuls.

**Compound Syrup of Blackberry Root.**

Blackberry root, bruised..	8 troy ounces
Cinnamon .....	3 drams
Cloves .....	3 drams
Nutmegs .....	3 drams
Sugar .....	4 pounds
Water .....	4 pints

Boil the root and the aromatics in the water for one hour; express and strain; then add the sugar, form a syrup, and again strain; then add:

French brandy.....	6 fl. ounces
Oil of cloves .....	4 drops
Oil of cinnamon .....	4 drops

Dose, a teaspoonful for a child 2 years old, to a tablespoonful for an adult, as occasion requires.

**Gripe Tincture, Tincture of Pimenta.**

Ground pimenta, 1 pound; rectified spirit and soft water, of each 3 pints; digest for some days and strain; give 4 fluid ounces at once, and repeat every hour till relieved.

**Tincture for Gripes, Flatulency, etc.**

Cinnamon .....	2 ounces
Coriander .....	2 ounces
Pimenta .....	2 ounces
Nutmegs .....	2 ounces
Diluted alcohol .....	½ gallon

Reduce the drugs to powder, macerate for 8 days and filter. Dose: One or two tablespoonfuls.

**Antidysentery Pills.**

Ipecac .....	1 grain
Calomel .....	1 grain
Extract of opium.....	2 grains
Syrup, quantity sufficient.	

Make into 6 pills.

One pill every 4 hours.

**Mixture of Extract of Cascarella.**

Extract of cascarella.....	1 dram
White sugar.....	6 drams
Oil of chamomile.....	20 drops
Tragacanth .....	½ dram
Wine of opium.....	25 drops
Cinnamon water.....	2 fl. ounces
Peppermint water.....	4 fl. ounces

Mix. A spoonful every hour in dysentery.

**Cholera Morbus.**

Oil of cinnamon.....	10 drops
Chloroform .....	6 drams
Tincture of opium.....	6 drams
Tincture of camphor.....	6 drams
Spirit of ammonia, aromatic .....	6 drams
Whisky .....	1½ ounces

Mix. One-half to one teaspoonful at a dose.

**Colic, Flatulent.**

Camphor water.....	1 ounce
Spirit of ether compound.	2 ounces
Tincture of cardamom compound .....	4 drams
Spirit of anise.....	6 drams
Syrup of ginger.....	2 drams
Peppermint water.....	1½ ounces

Mix. Dose, ½ ounce when flatulence is troublesome.

**Colic in Infants (No Opium).**

Sodium bicarbonate.....	8 grains
Oil of anise.....	8 minims
Mucilage of acacia.....	½ ounce
Peppermint water, enough to make.....	2 ounces

Mix. Dose, 1 dram every half hour. Very prompt; usually only two or three doses required.

**Colic in Infants (No Opium).**

Sodium bicarbonate.....	1 dram
Aromatic powder.....	1 ounce
Tincture of catechu.....	½ ounce
Peppermint water, enough to make.....	1 pint

Mix, let stand 24 hours, shaking often. Then filter. Dose: One or two teaspoonfuls every 2 or 3 hours.

**LOZENGES, TROCHES, PASTILLES, TABLETS, ETC.****Charcoal Lozenges.**

Powdered charcoal .....	1 ounce
Powdered sugar .....	2 ounces
Powdered vanilla .....	1 dram
Powdered chocolate .....	3 ounces
Mucilage of tragacanth, sufficient.	

Beat together, and form lozenges of 18 grains. For fetid breath.

**Charcoal Lozenges.**

Powdered charcoal .....	1 ounce
Powdered sugar .....	2 ounces
Powdered cinnamon .....	½ ounce
Powdered orris .....	½ ounce
Powdered chocolate .....	2 ounces
Mucilage, sufficient.	

Mix. Make 150 lozenges.

**Complexion Lozenges.**

Milk of sugar.....	5 grains
Podophyllin .....	1/6 grain
Cream of tartar.....	1 grain

Make into a tablet. One tablet should be taken every night and morning.

**Complexion Lozenges.**

Sublimed sulphur.....	4 grains
Cream of tartar.....	4 grains
Powdered ipecac.....	¼ grain
Syrup of vanilla, enough to make a mass for 1 lozenge.	

Mix. Take one lozenge 3 times a day.

**Anodyne Cough Lozenges.**

Extract of white poppies..	4 ounces
Extract of licorice .....	4 ounces
Powdered acacia.....	4 ounces
White sugar.....	1 pound

Mix together, making into a lozenge paste with distilled water. Divide into 10-grain lozenges and dry. One of these lozenges may be taken every four hours.

**Anodyne Cough Lozenges.**

Extract of white pine....	2 ounces
Extract of licorice .....	4 ounces
Heroin .....	10 grains
Powdered acacia .....	4 ounces
White sugar.....	1 pound

Make into 500 lozenges with water. Take one every 3 or 4 hours.

**Throat Lozenges.**

Potassium chlorate.....	11 ounces
Tragacanth, in powder..	1,050 grains
Sugar, in powder.....	2,800 grains
Extract of krameria, in powder .....	11 ounces
Black currant or red currant paste, a sufficient quantity to produce .....	16 pounds

Mix and divide into suitable lozenges.

**Cough Lozenges.**

Extract of blood root, licorice and black cohosh, of each  $\frac{1}{4}$  of an ounce; tinctures of ipecac and lobelia, with laudanum, of each  $\frac{1}{4}$  of an ounce; cayenne powdered, 10 grains; pulverized gum arabic and starch, of each  $\frac{1}{4}$  of an ounce; mix all together and add pulverized sugar, 3 ounces. If this should be too dry to roll into lozenges, add a thick solution of gum arabic to give it proper consistence; if too moist, add more sugar. Divide into 320 lozenges. Dose, 1 lozenge three to six times daily, as needed.

**Gum Lozenges.**

Powdered gum arabic..... 1 ounce  
Powdered sugar ..... 9 ounces  
Orange flower water..... 6 drams

Mix and form into lozenges weighing 15 grains each. A useful remedy to allay irritation of the throat in catarrh.

**Gum Lozenges.**

Powdered gum arabic..... 1 ounce  
Powdered vanilla ..... 2 drams  
Powdered sugar ..... 9 ounces  
Rose water, enough to form a mass.

Make 300 lozenges.

**Lactucarium Lozenges.**

Powdered lactucarium .... 2 drams  
Powdered sugar ..... 6 ounces  
Powdered gum arabic..... 5 ounces  
Powdered licorice ..... 5 ounces  
Tincture of tolu.....  $\frac{1}{2}$  ounce

Mix, and make lozenges of 10 grains.

**Lactucarium Lozenges.**

Powdered lactucarium .... 3 drams  
Powdered vanilla ..... 1 ounce  
Powdered cardamom .....  $\frac{1}{2}$  ounce  
Powdered cinnamon .....  $\frac{1}{4}$  ounce  
Powdered gum arabic..... 5 ounces  
Powdered sugar ..... 5 ounces  
Powdered orris ..... 5 ounces  
Syrup of tolu, enough to make a mass.

Make 720 lozenges.

**Pellitory Lozenges.**

Powdered pellitory ..... 1 dram  
Powdered mastic ..... 1 dram  
Mucilage of tragacanth, sufficient.

Mix, and make lozenges of 12 grains each. As a masticatory in toothache.

**Sanguinaria Lozenges.**

Powdered sanguinaria .... 200 grains  
Powdered gum arabic..... 4 ounces  
Powdered vanilla ..... 1 ounce  
Powdered sugar ..... 8 ounces  
Syrup, to make..... 400 lozenges

Useful in hacking cough.

**Antiseptic Pharyngeal Lozenges.**

Boric acid..... 35 grains  
Sodium benzoate..... 4 grains  
Oil of thyme..... 4 minims  
Sodium borate..... 35 grains  
Citric acid..... 20 grains  
Oil of lemon ..... 5 minims  
Oil of peppermint ..... 5 minims  
Powdered acacia ..... 2 drams  
Powdered sugar .....  $3\frac{1}{2}$  troy ounces  
Glycerin q. s.  
Water, q. s.  
Gelatin, q. s.

Make into 100 lozenges.

**Lozenges for Throat Dryness.**

Fluidextract of pyrethrum  $2\frac{2}{3}$  minim  
Pilocarpine hydrochloride.....  $1\frac{1}{32}$  grain  
Extract of licorice, pure.. 2 grains  
Acacia ..... 2 grains  
Glycerin ..... 1 minim  
Sugar, enough to make... 20 grains

The lozenges give great relief from the uncomfortable sensations of heat and dryness which characterize many acute and chronic affections of the mucous membrane of the throat and mouth, and one is used every 2, 3 or 4 hours, as necessary; but if used very freely, the quantity of pilocarpine should be reduced. The addition of 2 grains of ammonium chloride will often be beneficial in sub-acute inflammatory conditions of the mucous lining of the respiratory tract, while in more chronic affections 2 or 3 minims of the oleoresin of cubeb will serve a good purpose.

**Starch Lozenges.**

Starch .....  $\frac{1}{2}$  ounce  
Orris root.....  $\frac{1}{2}$  ounce  
Extract of licorice..... 1 ounce  
Saffron .....  $\frac{1}{2}$  ounce  
White sugar..... 1 pound

Mix, and form into lozenges of 15 grains.

**Starch Lozenges.**

Starch ..... 1 ounce  
Gum arabic..... 2 ounces  
White sugar..... 1 pound  
Benzoic acid.....  $\frac{1}{2}$  dram  
Rose water, sufficient to form a paste.

To be divided into lozenges of 15 grains.

**Starch Lozenges.**

Starch (arrowroot)..... 1 ounce  
Benzoic acid..... 60 grains  
Gum arabic..... 2 ounces  
Sugar, powdered..... 1 pound  
Powdered orris root..... 1 ounce  
Rose water, enough to form a paste.

Mix. Divide into 600 lozenges.

**Voice Lozenge.**

Cubeb .....  $\frac{1}{2}$  grain  
Benzoic acid.....  $1\frac{1}{3}$  grain  
Cocaine hydrochloride.....  $1\frac{1}{70}$  grain  
Pulverized tragacanth.....  $\frac{1}{4}$  grain  
Extract of licorice..... 5 grains  
Sugar ..... 13 grains  
Eucalyptol .....  $\frac{1}{4}$  minim  
Oil of anise.....  $1\frac{1}{20}$  minim  
Black currant paste,  
enough to make..... 20 grains

A small piece of the lozenge is to be allowed to dissolve in the mouth just before using the voice for singing or speaking.

**Blood Root Troches.**

Powdered blood root.....  $\frac{1}{2}$  ounce  
Powdered extract of licorice ..... 8 ounces  
Tincture of tolu..... 1 ounce  
Syrup of tolu, enough to form a mass.

Mix, and make into 480 troches.

**Troches Lactates of Sodium and Magnesium****With Pepsin.****(Digestive Pastilles.)**

Magnesium lactate..... 50 grains  
Sodium lactate..... 50 grains  
Sugar ..... 3 ounces  
Pepsin, pure..... 50 grains  
Tragacanth ..... 10 grains  
Water, enough to form a mass.

Mix and divide into 100 troches.



**Voice Lozenges.**

Benzoic acid.....	1 ounce
Cubeb .....	1 ounce
Heroin .....	10 grains
Cocaine hydrochloride.....	15 grains
Powdered vanilla.....	2 ounces
Eucalyptol .....	$\frac{1}{2}$ ounce
Thymol .....	$\frac{1}{4}$ ounce
Menthol .....	1 dram
Oil of anise.....	1 dram
Sugar, powdered.....	2 pounds

Make into a paste with syrup of tolu, and divide into 1,000 lozenges.

**Troches, Digestive.**

Strychnine sulphate.....	1 grain
Sodium bicarbonate.....	3 drams
Ginger .....	2 drams
Gentian .....	2 drams
Sugar .....	2 ounces

Water, a sufficient quantity.

Mix and make 100 troches.

One or two after meals.

**Licorice Troches, Black.**

Orris root.....	$\frac{1}{2}$ dram
Star anise.....	2 drams
Extract of licorice.....	5 ounces
Sugar .....	5 ounces

Pulverize, and mix with

Mucilage of acacia, enough to form a mass.

Divide into troches weighing 10 grains.

**Licorice Troches.**

Powdered extract of licorice .....	10 ounces
Powdered sugar .....	10 ounces
Powdered vanilla .....	1 ounce
Powdered cinnamon .....	1 dram
Powdered anise seed .....	2 drams

Mucilage of acacia, enough to form a paste.

Mix and make into 1,000 troches.

**Antiasthmatic Pastilles.**

Tincture of iodine.....	30 minims
Powdered stramonium ....	3 ounces
Powdered lobelia .....	3 ounces
Powdered cubeb .....	6 drams
Powdered sage .....	$1\frac{1}{2}$ ounces
Potassium nitrate.....	3 ounces

Mucilage of acacia, enough to form a paste.

To the well-mixed powders add the tincture of iodine and incorporate thoroughly; then add sufficient mucilage to make a stiff paste, which roll out flat and cut into small, oblong pieces.

**Antiasthmatic Pastilles.**

Powdered stramonium ....	2 ounces
Powdered lobelia .....	2 ounces
Powdered cubeb .....	1 ounce
Potassium nitrate.....	3 ounces
Charcoal .....	$\frac{1}{2}$ ounce
Powdered pine needles....	2 ounces
Eucalyptol .....	2 drams

Mucilage of acacia, enough to form a mass.

Divide into small pastilles.

**Stomach Pastilles.**

Galangal root.....	$\frac{1}{2}$ ounce
Aromatic powder.....	2 drams
Vanilla sugar.....	2 drams
Red saunders.....	1 dram
White sugar.....	5 ounces
Cacao mass.....	$\frac{1}{2}$ ounce
Tragacanth .....	1 dram

Reduce to a very fine powder, and thoroughly mix, and then make into a mass with orange flower water and divide into 200 pastilles.

**Pectoral Tablets With Ammonium Chloride.**

Purified extract of licorice .....	100.0 grams
Sugar .....	25.0 grams
Ammonium chloride.....	12.5 grams
Glycerin .....	6.0 grams
Tragacanth .....	5.0 grams

Powdered licorice, quantity sufficient.

Mix and make into a mass; form into tablets of 5 grains each.

**Iceland Moss Paste.**

Iceland moss.....	2 ounces
Gum arabic.....	10 ounces
Sugar .....	8 ounces

Water, a sufficient quantity.

Wash the Iceland moss in boiling water, and having rejected this, boil it in an additional portion of water for an hour. Express and strain, add the gum and sugar, and evaporate till a drop does not adhere to the back of the hand, then cool it on a marble slab.

**Marshmallow Paste (Opaque Gum Paste).**

Gum arabic, white.....	1 pound
Sugar .....	1 pound

Water, sufficient quantity.

Orange flower water.....	3 ounces
Whites of eggs.....	10

Contuse the gum, dissolve it in the water, and strain; put the gummy solution on the fire in a deep wide pan, add the sugar, stirring it constantly till it has the consistence of thick honey, carefully regulating the heat. Then beat the eggs to a froth, add them and the orange water to the paste gradually, which must be stirred constantly; continue to beat the paste until a small portion placed in the hand no longer adheres to it, then pour it on a slab or in pans dusted with starch.

**Medicated Secrets, or Cough Candy.**

To 10 pounds of candy add the following, and divide into secrets:

Tincture of squill .....	4 fl. ounces
Tincture of tolu .....	$\frac{1}{2}$ ounce
Camphorated tincture.....	$\frac{1}{2}$ ounce
Fluidextract of ipecac.....	8 minims
Oil of gaultheria .....	8 minims
Oil of sassafras .....	6 minims
Oil of aniseed .....	3 minims

Use as required, in ordinary coughs.

**Cough Candy.**

Powdered squill.....	2 ounces
Powdered ipecac .....	3 drams
Powdered opium .....	2 drams
Oil of anise seed.....	2 drams
Sugar .....	1 pound

Syrup of tolu, enough to make a mass.

Mix and cut into pieces of the size of candy.

**Camphor Cough Drops.**

Dutch crushed sugar.....	14 pounds
Cream of tartar.....	$\frac{1}{2}$ ounce
Spirit of camphor.....	$\frac{1}{4}$ ounce
Tincture of capsicum.....	$\frac{1}{4}$ ounce
Water .....	2 quarts

Saffron coloring.

Bring the sugar and water to a sharp boil, add the cream of tartar, and let the syrup boil up to strong crack degree. Drop in enough saffron to make the batch a bright golden tint. Pour the mass on an oiled slab, add the camphor and capsicum, work them well through the sugar, and pass the latter through tablet rollers.

## LAXATIVES, PURGATIVES, CATHARTICS, ETC.

### Constipation in Children.

Castor oil.....	½ ounce
Infusion of coffee.....	2 ounces
Powdered sugar.....	5 drams
Yolk of one egg.....	

Mix and emulsionize. Administer as usual in giving castor oil.

### Constipation in Children.

Castor oil.....	½ ounce
Egg .....	1
Powdered sugar.....	½ ounce
Syrup of vanilla.....	2 ounces

Mix and emulsify. Give a tablespoonful every hour.

### Laxative Electuary for Children.

Manna .....	1 ounce
Calcined magnesia.....	2 ounces
Flowers of sulphur.....	2 ounces
Honey .....	4 ounces

Make into an electuary. One or two teaspoonsfuls to be given in a cup of cold milk.

### Laxative Electuary for Children.

Calcined magnesia, heavy.....	1 ounce
Cream tartar.....	1 ounce
Sulphur .....	2 ounces
Sugar .....	8 ounces
Syrup of tolu, enough to form an electuary.....	

Mix. Dose: One or two teaspoonsfuls.

### Laxative Tea.

Buckthorn bark.....	4 ounces
Dandelion root.....	4 ounces
Senna leaves.....	4 ounces
Licorice root.....	1 ounce
Coriander seed.....	½ ounce
Anise seed.....	½ ounce

Reduce the drugs to a coarse powder and mix uniformly. The cathartic effect of this remedy may be increased by introducing a proper quantity of coarsely ground rhubarb. The decoction or "tea" is made from the mixture by steeping one tablespoonful in about ¼ pint of hot water and allowing it to stand about thirty minutes. An adult dose of this is about a teacupful.

### Laxative Tea.

Senna leaves.....	4 ounces
Dandelion .....	4 ounces
Rhubarb .....	1 ounce
Manna .....	4 ounces
Coriander .....	½ ounce
Anise seed.....	½ ounce
Fennel seed.....	½ ounce
Marshmallow root.....	2 ounces

Mix and reduce to a coarse powder. Use a tablespoonful to a pint of boiling water and drink hot.

### Elixir of Phenolphthalein.

Phenolphthalein .....	96 grains
Oil of spearmint .....	8 minims
Oil of cinnamon .....	10 minims
Oil of anise .....	12 minims
Alcohol .....	4 fl. ounces
Syrup, enough to make.....	16 fl. ounces

Add the oils to the alcohol, and in this solution dissolve the phenolphthalein (amorphous preferred). Then gradually add the syrup. Contains 6 grains of phenolphthalein to the ounce.

### Tonic Laxative.

Fluidextract of cascara sagrada .....	1 ounce
Fluidextract of nux vomica .....	2 drams
Compound tincture of gentian, enough to make.....	4 ounces
Mix. Dose, a teaspoonful.	

### Tonic Laxative.

Fluidextract of senna .....	1 ounce
Fluidextract of cascara sagrada .....	3 ounces
Strychnine sulphate.....	1 grain
Aromatic elixir, enough to make .....	1 pint
Mix. Dose: ½ to 1 tablespoonful.	

### Laxative Fruit Lozenges.

Aqueous extract of senna (first deprived of its resin) .....	40 parts
Pulp of purging cassia.....	20 parts
Pulp of tamarinds .....	5 parts
Spanish extract of licorice .....	4 parts
Resin of scammony.....	4 parts
Sugar (and tartaric acid).....	49 parts

Mix into large oval lozenges of 82 grains each, which are dipped in melted chocolate and afterwards covered with a coating of pure cane sugar.

### Laxative Fruit Lozenges.

Powdered refined sugar.....	600 parts
Pulp of tamarinds.....	200 parts
Powdered senna leaves.....	100 parts
Mucilage .....	70 parts
Essence of coriander.....	20 parts
Essence of lemon .....	10 parts

Mix. Make into a mass with water, and cut into lozenges of 20 grains each.

### Laxative Fruit Lozenges.

Powdered sugar.....	300 parts
Powdered vanilla chocolate .....	300 parts
Calcined magnesia.....	300 parts
Mucilage .....	70 parts
Tincture of vanilla.....	20 parts
Essence of cinnamon.....	10 parts

Mix and prepare as in the preceding.

### Castor Oil Syrup.

Castor oil.....	9 fl. drams
Gum arabic.....	4 troy drams
Mix, add .....	
Orange flower water.....	9 fl. drams
Make an emulsion, add .....	
Powdered sugar.....	1½ troy ounces
Cinnamon water.....	½ fl. dram

Mix. A tablespoonful as a dose for a child.

### Castor Oil Syrup.

Castor oil.....	1 ounce
Orange flower water.....	6 drams
Gum arabic.....	4 drams
Make into an emulsion, then add .....	
Pulverized sugar.....	4 drams
Simple syrup.....	1½ ounces

Mix. Dose, one or two tablespoonsfuls.

### Cathartic Syrup.

Senna, bruised.....	4 ounces
Podophyllin, powdered....	¼ ounce
Jalap, powdered.....	½ ounce
Cascara bark, bruised.....	4 ounces
Alcohol .....	1 pint
Sugar .....	5 pounds
Fennel seed, powdered.....	1 ounce
Coriander, powdered.....	1 ounce
Peppermint leaves, powdered .....	½ ounce

Water, a sufficient quantity.

Put the drugs in a mixture of 4 pints of water and 1 pint of alcohol. Let stand 3 days, shaking often. Strain and express, adding enough water through the strainer to make 4 pints of liquid. In this dissolve the sugar by gentle heat, adding enough water to make a gallon. Dose: one or two tablespoonfuls.

#### Cathartic Syrup.

Best senna leaf, 1 ounce; butternut, the inner bark of the root, dried and bruised, 2 ounces; peppermint leaf, 1 ounce; fennel seed, 1 ounce; alcohol, 1 pint; water, 2 pints; sugar, 2 pounds; put all into the spirit and water, except the sugar, and let it stand for 2 weeks, then strain, pressing out from the dregs, adding the sugar, and simmering a few minutes only, to form the syrup. If it should cause griping in any case, increase the fennel seed and peppermint leaf. Dose, 1 tablespoonful once a day, or less often, if the bowels become too loose.

#### Ideal Fruit Syrup.

Fluidextract of cascara sagrada (tasteless).....	1½ fl. ounces
Fluidextract of Oregon grape root.....	3 drams
Ground senna, No. 20, powder .....	6 drams
Prunes .....	2 av. ounces
Figs .....	2 av. ounces
Oil of fennel .....	10 minims
Oil of cinnamon .....	10 minims
Oil of cloves .....	5 minims
Sugar .....	3 ounces
Water, enough to make...	1 pint

Chop the figs and prunes, without stones, to a fine hash, mix with senna and steep in 12 ounces of water for 3 hours, adding sufficient to replace the water of evaporation. Strain through a 40-wire sieve. To this liquid add the sugar, and dissolve. Add the fluid-extracts and oils, make up to 1 pint with hot water, which has been poured over the fruit on sieve.

Some may prefer to leave out the oils, and add instead:

Fluidextract of licorice....	4 fl. drams
Others may prefer, instead of the licorice:	
Powdered nutmeg.....	3 drams
Dose, 1 to 2 tablespoonfuls.	

#### Syrup of Tamarinds.

Tamarinds .....	1 pound
Sugar .....	5 pounds
Orange flower water.....	4 ounces
Water, a sufficient quantity.	

Boil the tamarinds with a sufficient quantity of water for some time, express, and add sufficient of the decoction to the sugar to make a syrup. Clarify with the white of an egg, and when cold add the orange flower water. The finished product should measure 1 gallon.

#### Laxative Powder of Jeannel.

Rochelle salt.....	4 ounces
White sugar.....	8 ounces
Sodium bicarbonate.....	2 ounces
Tartaric acid, powdered...	2 ounces
Oil of lemon, sufficient quantity.	

Mix. Dose, a teaspoonful in water.

#### Apertient, Magnesian Effervescing.

Magnesium sulphate, 12 ounces; tartaric acid, 8 ounces; calcined magnesia, 3 ounces; pure sugar, 18 ounces; sodium bicarbonate, 6 ounces; essence of lemon, 30 drops. Dry the powders separately, mix and sieve them, then bottle securely. Two or three teaspoonfuls in water sufficient for a dose.

#### Syrup of Tamarinds.

Tamarind pulp.....	1 pound
Hot water.....	2 pints
White sugar.....	2 ounces

Digest the tamarind pulp with the hot water in a hot water bath for an hour, then express gently and strain. To the liquid add the sugar, dissolve by the aid of heat and strain, and add sufficient water to bring the finished product up to 2 pints.

#### Compound Licorice Powder.

Licorice root, powdered....	1 pound
Senna, powdered.....	1 pound
Fennel, powdered.....	½ pound
Sulphur, washed.....	½ pound
Sugar .....	3 pounds

Mix and sift. Dose, one or two teaspoonfuls in water.

#### Compound Saline Powder.

Potassium sulphate.....	3 ounces
Sodium chloride.....	4 ounces
Magnesium sulphate.....	4 ounces

Dry the salts separately, with a gentle heat; then triturate them well together, and preserve in glass vessels. Apertient in doses of two or three drams, dissolved in half pint of carbonic acid water. To be taken before breakfast.

#### Compound Laxative Powder.

Senna, powdered.....	1 pound
Sulphur .....	1 pound
Cream of tartar.....	1 pound
Sugar .....	5 pounds
Fennel .....	½ pound
Anise .....	½ pound

Mix and sift. Dose: one or two teaspoonfuls in the morning.

#### Seidlitz Powder (In One Bottle).

Potassium and sodium tartrate, 12 ounces; sodium bicarbonate, 4 ounces; tartaric acid, 3½ ounces; white sugar, 1 pound (all in fine powder); dry separately by gentle heat, add essence of lemon, ½ dram; mix well; pass the mixture through a sieve, and put it all at once in clean, dry bottles. A dessertspoonful or more to a tumblerful of water.

#### Buckthorn Cordial.

Buckthorn bark.....	15 av. ounces
Rochelle salt.....	8 av. ounces
Senna leaves.....	8 av. ounces
Licorice root.....	4 av. ounces
Ginger root.....	2 av. ounces
Sweet flag root.....	1 av. ounce
Coriander seed.....	2 av. ounces
Oil of wintergreen.....	5 minims
Oil of peppermint .....	10 minims
Diluted alcohol.....	5 pints
Sugar .....	4 av. pounds
Water, a sufficient quantity.	

Powder the drugs and percolate with the diluted alcohol, in which the oils have been dissolved, till 4 pints of percolate are obtained. Dissolve the salts and sugar in water to make 4 pints. Mix the two liquids and filter if necessary.

#### Palatable Castor Oil.

Treat the best grade castor oil with hot water repeatedly, then add enough saccharin to give it a syrupy taste. A minute quantity of the aldehyde of cinnamon oil and vanilla flavoring will cover any remaining disagreeable flavor. This process is said to impair neither the efficiency nor permanence of the oil.



**Palatable Castor Oil Mixture.**

Castor oil.....	1 ounce
Bitter almonds.....	1 dram
Sugar .....	1 ounce
Gum tragacanth.....	15 grains
Orange flower water, to make .....	4 ounces

Blanch the almonds and beat them fine with the tragacanth and sugar, add the oil, mix well and gradually add the orange flower water.

The only drawback to this mixture is that it requires a good deal of it for a dose, a teaspoonful of the oil being contained in about 4 teaspoonfuls of the mixture.

**Palatable Castor Oil Mixture.**

Castor oil.....	1 dram
Glycerin .....	1 dram
Tincture of orange.....	20 minims
Tincture of senega.....	5 minims
Cinnamon water, quantity sufficient .....	½ ounce

For one dose.

**Tasteless Castor Oil.**

Saccharin .....	.012 gram
Vanillin .....	.012 gram
Oil of coriander.....	.030 gram
Alcohol, 95 per cent.....	15.00 grams
Castor oil.....	240.00 grams
Olive oil.....	60.00 grams

Mix.

**Prepared Castor Oil.**

• Castor oil.....	360.00 grams
Fluidextract of glycyrrhiza .....	30.00 grams
Oil of coriander .....	.30 gram
Oil of anise .....	.30 gram
Oil of cinnamon .....	.30 gram
Oil of lemon .....	.60 gram
Glycerin, enough to make .....	1200.00 grams

Dissolve the oils in a little alcohol, and add to the fluidextract of glycyrrhiza previously mixed. Then add the castor oil under thorough trituration. By careful rubbing, a light limpid solution is produced in which the castor oil is practically tasteless.

**Purgative Chocolate.**

Cacao (powdered and freed from oil).....	50 grams
Sugar (pulverized).....	100 grams
Castor oil.....	50 grams
Vanilla (pulverized), quantity sufficient.	

Make into tablets. The oil should be incorporated with the cacao, and the sugar and vanilla added; the ingredients must be well worked up upon a heated slab and allowed to cool in molds.

**Purgative Coffee.**

Magnesium sulphate.....	3 ounces
Manna .....	2 ounces
Senna leaves.....	1 ounce
Roasted coffee.....	1 ounce
Jalap .....	1 dram
Oleosaccharate of anise....	1 dram

Mix. The dose for an adult is about 6 drams. When required for use put the mixture in a vessel, pour over it about 5 ounces of boiling water, and let infuse for fifteen minutes. Decant and administer warm or cold, as desired by patient.

An important factor in the treatment of constipation is, as a rule, regular and moderate exercise. As a means of temporarily relieving the condition, injections of glycerin or suppositories of glycerin or soap are said to be very effective.

**HEMORRHOIDS, PILES, ETC.****Ointment for Hemorrhoids.**

Antipyrine .....	1 dram
Salol .....	1 dram
Extract of belladonna.....	10 grains
Vaseline .....	6 drams
Wax, quantity sufficient.	

Mix. A piece, the size of a nut, to be introduced within the anus thrice daily.

**Ointment for Hemorrhoids.**

Pulverized opium.....	10 grains
Glycerin .....	2 drams
Thoroughly mix, then add a mixture of Yellow wax.....	1 ounce
Lard .....	1½ ounces
Oil of hyoscyamus.....	1½ ounces

Use 3 times a day.

**Ointment for Hemorrhoids.**

Tannin .....	20 grains
Cocaine hydrochloride.....	20 grains
Morphine sulphate.....	5 grains
Atropine sulphate.....	4 grains
Vaseline .....	1 ounce

Mix, and perfume with oil of rose.

Useful in painful cases. Use cautiously.

**Ointment for Hemorrhoids.**

Extract of belladonna.....	15 grains
Extract of opium.....	15 grains
Antipyrine .....	45 grains
Mercury ointment.....	2½ drams
Simple cerate.....	1 ounce

This is to be made into an ointment and applied to the inflamed hemorrhoids. Rectal injections of warm water are to be employed if constipation is present.

**Astringent Ointment, Thompsonian.**

Mutton suet.....	1 pound
Melt, boil for half an hour with Witchhazel or sumac leaves .....	2 ounces

Strain and allow to cool. Use 3 times a day.

**Posner's Haemorrhoidalpulver.**

Jalap .....	2 drams
Rhubarb .....	1 dram
Lemon sugar.....	1 dram
Cream of tartar.....	2 ounces
Purified sulphur.....	3 ounces

Mix. Teaspoonful 3 times a day.

**Hemorrhoids.**

Chrysarobin .....	1 grain
Cacao butter.....	30 grains
Iodoform .....	¼ grain
Extract of belladonna....	1-10 grain

Make into 1 suppository.

**Nutgall and Morphine Ointment.**

Morphine .....	10 grains
Olive oil .....	1 ounce
Zinc ointment.....	4 ounces
Powdered nutgalls.....	½ ounce

Mix. Used in the treatment of painful hemorrhoids.

**Nutgall and Opium Ointment.**

Nutgalls, powdered.....	1 ounce
Opium powdered.....	1 ounce
Cerate .....	3 ounces

Mix. Use morning and night.

**Bleeding Piles.**

Tannic acid.....	20 to 30 grains
Water .....	6 ounces

Mix and dissolve. To be injected, after being cooled with ice, into the rectum.

**Bleeding Piles.**

Tannic acid..... 1 dram  
 Morphine sulphate..... 10 grains  
 Water ..... 8 ounces  
 Mix and dissolve. Inject  $\frac{1}{2}$  to 1 ounce.

**Bleeding Piles.**

Tannic acid..... 1 dram  
 Cocaine hydrochloride.... 15 grains  
 Water ..... 10 ounces  
 Mix and dissolve. Inject  $\frac{1}{2}$  to 1 ounce.

**Bleeding Piles.**

Tincture of opium..... 2 drams  
 Cocaine hydrochloride.... 10 grains  
 Tannic acid..... 75 grains  
 Water ..... 10 ounces  
 Mix and dissolve. Inject  $\frac{1}{2}$  to 1 ounce.

**Piles.**

Injectations of tincture of hamamelis, 1 tea-spoonful to the ounce of cold water, daily before rising. Also take internally 2 to 5 minims, 3 times daily.

**Piles.**

As a hypodermic injection:

Carbolic acid..... 2 drams  
 Tannic acid..... 1 dram  
 Alcohol ..... 4 drams  
 Glycerin ..... 1 ounce

Mix.

**Pile Ointment.**

Powdered nutgalls..... 60 grains  
 Powdered opium..... 30 grains  
 Goulard's cerate.....  $\frac{1}{2}$  ounce  
 Simple ointment.....  $\frac{1}{2}$  ounce

Mix and apply as required.

**Pile Ointment.**

Powdered nutgalls.....  $\frac{1}{2}$  ounce  
 Cocaine hydrochloride.... 20 grains  
 Lead ointment..... 2 ounces  
 Simple ointment..... 2 ounces

Mix. Apply twice a day.

**Pile Ointment.**

Powdered nutgalls..... 1 dram  
 Powdered opium..... 15 grains  
 Cocaine hydrochloride.... 5 grains  
 Zinc ointment..... 1 ounce

Mix. Apply night and morning.

**Pile Ointment.**

Morphine acetate..... 5 grains  
 Tannic acid.....  $\frac{1}{2}$  dram  
 Liniment of subacetate of lead .....  $\frac{1}{2}$  fl. ounce  
 Simple ointment..... 7 drams

Triturate the tannic acid with the liniment, and then mix all together.

**Pile Ointment.**

Extract of stramonium seeds ..... 15 grains  
 Extract of hyoscyamus.... 30 grains  
 Ointment ..... 1 ounce

Mix.

**Pile Ointment.**

Chrysarobin ..... 12 grains  
 Iodoform ..... 5 grains  
 Extract of belladonna.... 10 grains  
 Petrolatum ..... 3 ounces

Mix and apply 3 times a day.

**Pile Ointment.**

Ointment of galls..... 4 drams  
 Bismuth subnitrate..... 1 dram  
 Powdered opium..... 10 grains  
 Soft paraffin..... 1 ounce

Mix well.

**Pile Ointment.**

Gallic acid..... 20 grains  
 Extract of opium..... 10 grains  
 Extract of belladonna.... 10 grains  
 Simple ointment..... 1 ounce

Apply night and morning.

**Pile Ointment.**

Ointment ..... 3 ounces  
 Litharge ointment..... 3 ounces  
 Saffron in powder..... 1 dram  
 Opium, powdered..... 10 grains  
 Yolk of three eggs.

Beat all well together.

**Itching Piles.**

Yellow oxide of mercury... 5 grains  
 Petrolatum ..... 1 ounce  
 Triturate the oxide of mercury with a few drops of almond oil until it becomes very smooth, then add the petrolatum.

**Itching Piles.**

Camphor ..... 1 dram  
 Opium ..... 10 grains  
 Zinc ointment..... 2 drams  
 Vaseline ..... 2 ounces  
 Mix well and use morning and night.

**Pile Salve.**

Saffron, powdered..... 1 dram  
 Camphor ..... 1 dram  
 Oil of hyoscyamus (infused) 1 ounce  
 Lead ointment..... 2 ounces

Mix well. Apply twice a day.

**Itching Around the Bowel.**

Camphor ..... 1 dram  
 Cocaine ..... 10 grains  
 Lanolin ..... 3 drams  
 Ointment of benzoated zinc oxide..... 3 drams  
 Rub in well, whenever troubled with irritation and itching.

**Pile Suppositories.**

Iodoform ..... 1 dram  
 Balsam peru..... 2 drams  
 Oil of theobroma.....  $1\frac{1}{2}$  drams  
 White wax.....  $1\frac{1}{2}$  drams  
 Calcined magnesia..... 1 dram

Mix. Divide in 12 suppositories. One of these should be introduced after each evacuation.

**Pile Suppositories.**

Tannic acid..... 24 grains  
 Opium ..... 6 grains  
 Cacao butter..... 5 drams

Make into 12 suppositories. Use one after each passage.

**Pile Suppositories.**

Nutgall ..... 1 dram  
 Balsam, powdered..... 12 grains  
 Balsam peru..... 1 dram  
 Cacao butter..... 5 drams

Make 12 suppositories. Use one when required.

**Pile Suppositories.**

Tannic acid..... 1 dram  
 Balsam peru..... 1 dram  
 Extract of belladonna.... 6 grains  
 Extract of opium..... 6 grains  
 Cacao butter..... 5 drams

Make 12 suppositories. Use one 3 times a day.

**Pile Suppositories.**

Gaïlic acid.....	1 dram
Cocaine hydrochloride.....	6 grains
Cacao butter.....	5 drams

Make 12 suppositories. Use one 3 times a day.

## DYSPEPSIA, INDIGESTION, ETC.

**Dyspepsia.**

Powdered capsicum.....	40 grains
Extract of nux vomica.....	3 grains
Extract of pancreas.....	1 dram

For 20 capsules, one after each meal.

**Dyspepsia.**

Powdered ginger.....	1 dram
Strychnine sulphate.....	$\frac{1}{2}$ grain
Pancreatin .....	40 grains
Pepsin .....	20 grains

Mix and make 20 capsules. One after each meal.

**Dyspepsia.**

Powdered capsicum.....	10 grains
Powdered ginger.....	40 grains
Extract of nux vomica.....	5 grains
Sodium bicarbonate.....	1 dram

Mix and make 20 capsules. One after meals.

**Flatulent Dyspepsia.**

Bismuth salicylate.....	1 dram
Husband's magnesia.....	1 dram
Powdered willow charcoal	$1\frac{1}{2}$ drams
Oil of anise.....	10 drops

Mix and triturate thoroughly. Give nearly a teaspoonful  $\frac{1}{2}$  to 1 hour before each meal or right after eating.

**Flatulent Dyspepsia.**

Bismuth subnitrate.....	1 dram
Sodium bicarbonate.....	1 dram
Oil of anise.....	10 drops
Menthol .....	2 grains

Make 20 capsules. One after meals.

**Anodyne in Dyspepsia.**

Chloroform water.....	10 fl. ounces
Syrup of calumba.....	$2\frac{1}{2}$ fl. ounces
Extract of cannabis indica	$2\frac{1}{2}$ grains

Mix. Tablespoonful every half hour until relieved.

**Anodyne in Dyspepsia.**

Tincture of gentian comp.	1 ounce
Sodium bicarbonate.....	$\frac{1}{2}$ ounce
Chloroform water, enough	
to make .....	8 ounces

Mix and dissolve. A tablespoonful every  $\frac{1}{2}$  hour till relieved.

**Huchard's Elixir for Gastric Dyspepsia.**

Cocaine hydrochloride....	10 grains
Hydrochloric acid dilute..	1 dram
Elixir garus (or aromatic	
elixir, N. F.).....	8 ounces.
Water .....	2 ounces

Dose, one tablespoonful after eating, for dyspepsia complicated with gastralgia.

**Dyspepsia Elixir.**

Tincture of cardamom comp.	1 ounce
Tincture of gentian comp.	$\frac{1}{2}$ ounce
Cocaine hydrochloride....	10 grains
Hydrochloric acid dilute..	2 drams
Whisky .....	4 ounces
Water, enough to make....	8 ounces

Mix. One tablespoonful after meals.

**Antidyspeptic Powder.**

Bismuth subnitrate.....	$2\frac{1}{2}$ drams
Magnesium carbonate.....	$2\frac{1}{2}$ drams
Prepared chalk.....	$2\frac{1}{2}$ drams
Calcium phosphate.....	$2\frac{1}{2}$ drams

Mix, and divide into 40 papers. One paper to be taken at each meal, or whenever oppressed by gastrodynia or gastralgia due to superacidity.

**Antidyspeptic Powder.**

Calcined magnesia.....	2 drams
Precipitated chalk.....	2 drams
Charcoal .....	2 drams
Bismuth subnitrate.....	2 drams
Sugar of milk.....	3 ounces

Mix. A small teaspoonful in water after meals.

**Dyspepsia Tablets.**

Pepsin .....	1 grain
Pancreatin .....	1 grain
Calcium lactophosphate...	2 grains

Mix and make into one tablet.

**Dyspepsia Tablets.**

Bismuth salicylate.....	2 grains
Pepsin .....	1 grain
Extract of nux vomica.....	1-6 grain

Mix. For one tablet or capsule.

**Dyspepsia Tablets.**

Bismuth subnitrate.....	2 grains
Pepsin .....	1 grain
Pancreatin .....	1 grain
Aromatic spices.....	$\frac{1}{2}$ grain

Mix. For one tablet.

**Dyspepsia Tablets.**

Bismuth subnitrate.....	200 grains
Pepsin .....	100 grains
Extract of nux vomica.....	15 grains
Extract of gentian.....	30 grains
Menthol .....	4 grains

Mix and make into 100 tablets or capsules.

**Indigestion.**

Pepsin, saccharated.....	2 drams
Bismuth subcarbonate.....	2 drams
Powdered willow charcoal..	2 drams
Sodium bromide.....	2 drams
Tincture of nux vomica.....	1 dram
Tincture of calumba.....	1 ounce
Peppermint water, enough	
to make .....	6 ounces

A teaspoonful after meals.

**Indigestion.**

Tincture of nux vomica....	$1\frac{1}{2}$ drams
Tincture of gentian comp..	4 drams
Bismuth subcarbonate....	3 drams
Sodium bicarbonate.....	4 drams
Sodium bromide.....	2 drams
Anise water, enough to	
make .....	8 ounces

Mix. Shake and take one or two teaspoonfuls after meals.

**Indigestion.**

Ammonium carbonate.....	40 grains
Magnesium sulphate.....	4 drams
Tincture of belladonna....	1 dram
Tincture of nux vomica....	1 dram
Tincture of ginger.....	1 dram
Spirit of chloroform.....	2 drams
Peppermint water, enough	
to make.....	6 ounces

Mix. A tablespoonful every four hours.



**Indigestion.**

Ammonium carbonate.....	½ dram
Sodium sulphate.....	4 drams
Tincture of nux vomica....	1 dram
Tincture of calumba.....	1 ounce
Chloroform water, enough to make .....	8 ounces

Mix and dissolve. A tablespoonful every 4 hours.

**Digestive Pastilles of Borivent.**

Bismuth subnitrate.....	1 ounce
Calcium phosphate.....	1½ ounces
Sodium bicarbonate.....	½ ounce
Magnesium carbonate.....	10 ounces
Iron carbonate.....	2 ounces
Sugar .....	3 pounds

Mix and flavor with oil of peppermint, anise or orange flowers. Make pastilles of 15 grains each.

**Digestive Pastilles.**

Sodium bicarbonate.....	200 grains
Calined magnesias, heavy	200 grains
Bismuth subnitrate.....	200 grains
Strychnine sulphate.....	1 grain
Oil of anise.....	1 dram
Sugar .....	2 ounces

Mix and make into 100 pastilles. One or two after meals.

**Pastilles of Lactic Acid.**

Lactic acid.....	1 dram
Powdered sugar.....	1½ ounces
Vanilla sugar.....	10 grains
Powdered tragacanth.....	5 grains
Water, a sufficient quantity.	

Mix and make into 50 pastilles. Use 2 or 3 pastilles at a time for dyspepsia or sour stomach.

**Pastilles of Lactic Acid.**

Lactic acid.....	2 drams
Aromatic powder.....	1 dram
Sugar .....	3 ounces
Gum acacia.....	20 grains
Water, enough to make a paste.	

Mix and make into 100 pastilles.

**Heartburn.**

Carbolic acid.....	4 minims
Tincture of iodine.....	16 minims
Tincture of nux vomica....	1 dram
Peppermint water.....	4 fl. ounces

Mix. One teaspoonful every 2 hours until relieved.

**Heartburn.**

Sodium bicarbonate.....	3 drams
Tincture of nux vomica....	1 dram
Tincture of cardamom comp.	3 drams
Peppermint water, enough to make .....	4 ounces

Mix. One teaspoonful every 2 hours till relieved.

**Bismuth Powders.**

Bismuth subnitrate.....	1 dram
Saccharated pepsin.....	1 dram
Cerium oxalate.....	15 grains

Mix and divide into 12 powders. Sometimes add:

Morphine sulphate.....	½ grain
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**Compound Bismuth Powders.**

Bismuth subcarbonate.....	1 dram
Cerium oxalate.....	30 grains
Extract of nux vomica....	3 grains

Mix, and divide into 12 powders. One every four hours.

**Soda Mint.**

Sodium bicarbonate.....	½ ounce
Aromatic spirit of ammonia	1 ounce
Spearmint water.....	2 ounces

Mix. Dose: one or two teaspoonfuls for an adult; ½ teaspoonful for an infant.

**Soda Mint, Colored.**

Sodium bicarbonate.....	½ ounce
Tincture of cardamom comp.	½ ounce
Peppermint water, enough to make .....	4 ounces

Mix. Dose: one or two teaspoonfuls.

**Soda Mint, Liquid.**

Sodium bicarbonate.....	2 drams
Aromatic spirit of ammonia	½ fl. ounce
Peppermint water, enough to make.....	8 fl. ounces

Mix. Dose, 1 teaspoonful.

**Soda Mint, Liquid.**

Sodium bicarbonate.....	2 drams
Aromatic spirit of ammonia	2 drams
Cocaine hydrochloride....	2 grains
Peppermint water, enough to make.....	8 ounces

Mix. Dose, one or two teaspoonfuls.

**Soda Mint, Liquid.**

Sodium bicarbonate.....	2 drams
Sugar .....	2 drams
Aromatic spirit of ammonia	15 minims
Peppermint water, enough to make.....	8 fl. ounces

Mix. Dose, 1 tablespoonful.

**Soda Mint, Liquid.**

Ammonium carbonate.....	1 dram
Sodium bicarbonate.....	1 dram
Aromatic elixir.....	1 ounce
Peppermint water, enough to make.....	8 fl. ounces

Mix and dissolve. Dose, ½ to 1 tablespoonful.

**Soda Mint, Liquid.**

Sodium bicarbonate.....	2 ounces
Sugar .....	½ ounce
Camphor water.....	6 ounces
Peppermint water, enough to make.....	2 pints

Mix. Dose, ½ to 1 tablespoonful.

**Soda Mint, Liquid.**

Ammonium carbonate.....	2 drams
Sodium bicarbonate.....	1 ounce
Camphor water.....	4 ounces
Elixir, simple.....	1 ounce
Peppermint water, enough to make.....	1 pint

Mix and dissolve. A tablespoonful.

**Soda Mint, Liquid.**

Sodium bicarbonate.....	2 ounces
Glycerin .....	4 fl. ounces
Aromatic spirit of ammonia	1 fl. ounce
Spearmint water.....	2 pints
Peppermint water.....	2 pints

Mix and filter.

**Soda Mint, Liquid.**

Sodium bicarbonate.....	2 drams
Glycerin .....	2 ounces
Ammonium carbonate.....	1 dram
Spearmint water.....	4 ounces
Peppermint water, enough to make.....	1 pint

Mix and dissolve. Dose, a tablespoonful.

**Soda Mint, Liquid.**

Sodium bicarbonate.....	1 dram
Aromatic spirit of ammonia	1 dram
Spearmint water.....	2 ounces

Mix.

**Soda Mint, Liquid.**

Sodium bicarbonate.....	3 drams
Sodium carbonate.....	1 dram
Glycerin .....	4 ounces
Spearmint water, enough	
to make.....	1 pint

Mix and dissolve. Dose, a tablespoonful.

**CHILBLAINS.****Chilblains.**

Carbolic acid.....	10 grains
Petrolatum .....	1 ounce
Oil of turpentine.....	1 ounce

Mix. Apply to affected part.

**Chilblains.**

Spirit of camphor.....	2 drams
Tincture of opium.....	2 drams
Carbolic acid.....	40 grains
Alcohol .....	4 drams
Water .....	4 drams

Mix. If the skin is broken, this lotion may be diluted with water and applied on lint or with a soft rag.

**Chilblains.**

Carbolic acid.....	10 grains
Oil of turpentine.....	2 drams
Flexible collodion.....	6 drams

Mix. Paint on the affected parts morning and night.

**Chilblains.**

Belladonna liniment.....	2 drams
Aconite liniment.....	1 dram
Carbolic acid.....	6 minims
Flexible collodion, enough	
to make.....	1 ounce

Mix. Apply with a camel-hair pencil every night to the parts affected.

**Chilblains.**

Extract of aconite .....	10 grains
Extract of belladonna .....	20 grains
Carbolic acid.....	5 grains
Alcohol .....	1 dram
Flexible collodion.....	7 drams

Mix. Rub the extracts and acid with the alcohol and add the collodion. Paint on the affected part 3 times a day.

**Chilblains.**

Bismuth salicylate.....	2 drams
Pulverized starch.....	18 drams

First bathe the chilblains in a decoction of walnut leaves; then rub with spirit of camphor and cover with the powder. To quiet the itching use the following:

Glycerin .....	1 ounce
Rose water.....	1 ounce
Tannic acid.....	1 grain

Mix and use as a lotion, and then dust on the above powder.

**Chilblain Powder.**

Bismuth subnitrate.....	2 drams
Zinc oxide.....	4 drams
Morphine acetate.....	4 grains
Starch, enough to make..	3 ounces

Mix. Wash the parts, dry and apply powder.

**Chilblains.**

Phenol (pure).....	6 grains
Oil of turpentine.....	3 drams
Olive oil.....	5 drams

Mix. Paint on affected parts.

**Chilblains.**

Castor oil.....	4 drams
Oil of turpentine.....	4 drams
Flexible collodion.....	4 drams

Mix. To be used 2 or 3 times daily.

**Chilblain Liniment.**

Solution of lead sub-	
acetate .....	½ ounce
Stronger water of am-	
monia .....	½ ounce
Glycerin .....	½ ounce
Soap liniment.....	1½ ounces

Mix. A good remedy for application to chilblains before the skin is broken.

**Chilblain Lotion.**

Tincture of opium.....	1 ounce
Carbolic acid.....	10 grains
Glycerin .....	1 ounce
Camphor water.....	2 ounces

Mix. Apply to affected parts.

**Chilblain Lotion.**

Tincture of opium.....	½ ounce
Solution of lead sub-	
acetate .....	½ ounce
Glycerin .....	½ ounce
Rose water, enough to	
make .....	4 ounces

Mix. Apply night and morning.

**Chilblain Ointment.**

Tincture of benzoin.....	2 drams
Linseed oil .....	4 drams
Yellow wax.....	2 drams
Glycerin, enough to make	
an ointment.....	

Mix.

**Chilblain Ointment.**

Carbolic acid.....	1 grain
Tincture of iodine.....	2 drams
Tannic acid.....	2 drams
Simple cerate.....	4 ounces

Mix.

**Chilblain Ointment.**

Carbolic acid.....	15 grains
Lanolin .....	2 drams
Oil of lemon .....	10 drops
Oil of lavender .....	10 drops
Oil of sweet almond,	
enough to make.....	2 ounces

Mix well together and apply with camel-hair pencil.

**Chilblain Ointment.**

Benzoic acid.....	½ dram
Tannic acid.....	½ dram
Carbolic acid.....	5 grains
Zinc ointment, enough to	
make.....	1 ounce

Mix well. A good soothing ointment, to be used morning and night.

**Chilblain Ointment.**

Carbolic acid.....	10 grains
Lead ointment.....	3 drams
Lanolin .....	1½ drams
Oil of sweet almond.....	1½ drams
Oil of lavender.....	10 drops

Mix. Apply two or three times daily to the affected parts.

**Chilblain Ointment.**

Benzoic acid..... 1 dram  
 Powdered opium..... 20 grains  
 Ointment ..... 7 drams  
 Mix well and apply twice a day.

**Chilblain Salve.**

Benzoated lard..... 6 parts  
 Yellow wax..... 3 parts  
 Resin, white..... 1 part  
 Camphor ..... 1 part  
 Oil of cajuput..... 1 part

Melt the resin and wax, add the lard; then when somewhat cooled add the camphor in powder, and lastly the cajuput oil.

**Chilblain Salve.**

Benzoic acid..... 1 dram  
 Camphor ..... 1 dram  
 Eucalyptol ..... ½ dram  
 Ointment, enough to make. 4 ounces

Mix as directed in the preceding formula.

**Frost Bite.**

Zinc oxide..... ½ dram  
 Tannic acid..... 15 grains  
 Glycerin ..... 1½ drams  
 Balsam peru..... 2 drams  
 Camphor ..... 1 dram

Mix. Apply externally with brush.

**Frost Bite.**

Tincture of benzoïn com-  
 pound ..... 3 drams  
 Tincture of aconite root.. 1 dram

Mix. Apply externally to the parts affected.

**Frost Bite.**

Zinc oxide..... 1 dram  
 Bismuth subnitrate..... 2 drams  
 Balsam peru..... 1 dram  
 Camphorated oil, enough  
 to make..... 2 ounces

Mix. Shake and apply with brush.

**Frost Bite.**

Tincture of myrrh ..... 2 drams  
 Tincture of aconite ..... 2 drams  
 Tincture of benzoïn ..... 2 drams  
 Tincture of tolu ..... 2 drams

Mix and brush on the affected parts.

**Frost Bite.**

Sulphurous acid..... 3 drams  
 Glycerin ..... 1 dram  
 Water ..... 1 dram

Mix. Apply to affected part.

**Frost Bite.**

Salicylic acid..... ½ dram  
 Atropine sulphate..... 5 grains  
 Collodion ..... 4 drams

Mix. Apply with a camel-hair brush.

**Frost Bite.**

Glycerin ..... 2 drams  
 Sulphurous acid..... 4 drams  
 Cocaine, alkaloid..... 4 grains  
 Water ..... 2 drams

Mix. Paint with camel-hair brush on the affected parts.

**Frost Bite.**

Salicylic acid..... 1 dram  
 Cocaine, alkaloid..... 5 grains  
 Alcohol ..... 2 drams  
 Flexible collodion..... 1 ounce

Dissolve the acid and cocaine in the alcohol, add the collodion and apply with camel-hair brush.

**Frost Bite Liniment.**

Tannic acid..... 1 part  
 Glycerin (or camphor-  
 spirit) ..... 25 parts

Mix and use externally.

**Frost Bite Liniment.**

Tannic acid..... 2 parts  
 Alcohol ..... 5 parts  
 Collodion ..... 20 parts  
 Tincture of benzoïn..... 2 parts

Mix and apply.

**Frost Bite Lotion.**

Salicylic acid..... 1 dram  
 Tannic acid..... ½ dram  
 Glycerin ..... 2 ounces

Dissolve with gentle heat and apply with camel-hair brush.

**Frost Bite Lotion.**

Benzoic acid..... ½ dram  
 Salicylic acid..... ½ dram  
 Carbolic acid..... 10 grains  
 Tannic acid..... 20 grains  
 Tincture of benzoïn comp.,  
 enough to make..... 2 ounces

Dissolve the acids in the tincture and apply with camel-hair brush.

**Frost Bite.**

Powdered camphor..... 3 grams  
 Lanolin ..... 15 grams  
 Vaseline ..... 15 grams  
 Hydrochloric acid..... 2 grams

Mix. Rub in at night.

**Paint for Frost Bite.**

Peru balsam..... 5 grams  
 Oleobalsamic mixture..... 30 grams  
 Cologne water..... 30 grams

Mix and apply.

**Frost Bite Salve.**

Powdered camphor..... 1 dram  
 Morphine sulphate..... 10 grains  
 Lanolin ..... 4 drams  
 Zinc ointment, enough to  
 make ..... 4 ounces

Mix. Apply night and morning.

**Frost Bite Paint.**

Balsam peru..... 2 drams  
 Lanolin ..... 4 drams  
 Morphine alkaloid..... 10 grains  
 Camphorated oil, enough  
 to make..... 2 ounces

Mix well together and apply with brush.

**Frost Balsam.**

Castile soap..... 2 drams  
 Potassium iodide..... 1 dram  
 Camphor ..... 2 ounces

Dissolve by shaking with

Rose water..... 2 drams  
 Alcohol ..... 3 ounces  
 Filter the solution, and to the filtrate add:  
 Tincture of benzoïn..... 2 drams  
 Glycerin ..... 2 drams

Mix. An excellent application for frost bites.

**Frost Balsam.**

Camphor ..... 4 drams  
 Ammonium iodide..... 1 dram  
 Tincture of benzoïn..... 3 ounces  
 Tincture of tolu..... 3 ounces  
 Glycerin, enough to make. 8 ounces

Dissolve the camphor and iodide in the tinctures and add the glycerin.



**Frost Bite—Russian Ointment.**

Bone marrow..... 2 drams  
 Hydrochloric acid.....1½ drams  
 Althaea ointment.....5½ drams  
 Aqueous extract of opium. 1 dram  
 Camphor .....4½ drams  
 Venice turpentine.....9½ drams  
 Mix and apply.

**Frost Bite Ointment.**

Powdered opium ..... 1 dram  
 Powdered camphor ..... 4 drams  
 Cocaine hydrochloride.... ½ dram  
 Zinc ointment, enough to  
 make ..... 3 ounces  
 Mix well. Apply twice a day.

**WARTS.****Ointment for Warts.**

A rational treatment is said to be the use of a 20 per cent ointment of pyrogallallic acid applied two or three times a day.

**Ointment for Warts.**

Pyrogallallic acid.....1½ drams  
 Carbolic acid.....10 grains  
 Salicylic acid..... ½ dram  
 Benzoinated lard, enough  
 to make..... 1 ounce  
 Mix well. Apply twice a day.

**For Warts.**

Salicylic acid..... 1 part  
 Alcohol ..... 1 part  
 Sulphuric ether.....2½ parts  
 Collodion ..... 5 parts  
 Mix. Paint the warts with the solution daily.

**Wart Paint.**

Chloral hydrate..... 6 parts  
 Acetic acid..... 6 parts  
 Salicylic acid..... 4 parts  
 Ether ..... 4 parts  
 Collodion ..... 15 parts  
 Mix. Apply with a camel-hair pencil.

**Wart Paint.**

Salicylic acid..... 1 dram  
 Benzoic acid..... ½ dram  
 Alcohol ..... 2 drams  
 Ether ..... 1 dram  
 Flexible collodion, enough  
 to make..... 1 ounce  
 Dissolve the acids in the alcohol and ether, add the collodion and mix. Paint on warts morning and night.

**For Warts.**

Chrysarobin ..... 40 grains  
 Collodion ..... 3 drams  
 Mix. Apply with a camel-hair pencil every day or two.

**Paint for Warts.**

Chrysarobin ..... 1 dram  
 Salicylic acid..... 1 dram  
 Alcohol ..... 2 drams  
 Collodion, enough to make 1 ounce  
 Dissolve the chrysarobin and salicylic acid in the alcohol and add the collodion.

**For Warts.**

Take off the outer scarf of the wart, causing it to bleed slightly, and apply a saturated solution of ammonium chloride in distilled water. Repeat this application several times daily, until the wart disappears.

**Wart Destroyer.**

Monochloroacetic acid..... 1 dram  
 If not liquid, add a few drops of acetic acid. Apply a very small drop by means of a pointed match to the wart twice a day, and allow to dry. Care must be taken not to touch the sound skin. In a week or two the wart will disappear.

**Wart Destroyer.**

Trichloroacetic acid..... 1 dram  
 Acetic acid ..... ½ dram  
 Mix and apply as directed in the preceding.

**For Warts.**

Solution sodium ethylate.. 2 drams  
 Every two or three days touch the wart with the solution, administered with a camel-hair pencil.

**For Warts.**

Apply once daily about the base of the wart 1 part of corrosive sublimate in 30 parts collodion.

**Wart Destroyer.**

Corrosive sublimate..... 10 grains  
 Acetic acid..... 1 dram  
 Alcohol ..... 7 drams  
 Mix and dissolve. Apply twice daily to the wart carefully.

**Cure for Warts.**

The best cautery for warts is said to be dichloroacetic acid. It must be applied on the sharp point of a stopper made for the purpose, and great caution should be observed not to use too much of it, as it will burn a deep hole in the flesh. One application is frequently sufficient.

**Wart Remover.**

Salicylic acid..... 5 parts  
 Boric acid..... 15 parts  
 Calomel ..... 30 parts  
 Mix, and make into a fine powder. Put into small glass tubes, with the direction to rub a small portion on the wart three times daily.

**Wart and Corn Cure.**

One dram each of strong acetic acid and tincture of iodine, with 2 drams thick mucilage.

**Wart and Corn Cure!**

Acetic acid..... 2 drams  
 Tincture of iodine..... 2 drams  
 Tincture of aconite..... 2 drams  
 Mix and apply a drop morning and night.

**Ointment for Warts.**

Salicylic acid..... 3 drams  
 Creosote ..... 6 drams  
 Wax,  
 Lard, of each sufficient.  
 Mix and make an ointment firm enough to adhere to the skin.

**Ointment for Warts.**

Carbolic acid..... 1 dram  
 Salicylic acid..... 2 drams  
 Cerate ..... 7 drams  
 Mix and apply twice a day.

**Wart Remover.**

According to Potter, heat is a most thorough means for the radical removal of warts; it may be applied by touching the wart three or four times daily with the hot end of a cigar; the first few applications only, it is said, give pain.

**Wart Paint.**

Resorcin .....	150 grains
Salicylic acid.....	150 grains
Lactic acid.....	150 grains
Flexible collodion.....	900 grains
Ether .....	300 grains

Mix and apply with a camel-hair pencil.

**Wart Solvent.**

Camphor .....	30 grains
Carmine .....	1 grain
Glacial acetic acid.....	2 fl. ounces

Mix and apply with a camel-hair pencil.

**Powder for Removal of Warts.**

Salicylic acid.....	1 dram
Boracic acid.....	3 drams
Calomel .....	6 drams

Mix. Rub a small portion on the warts thrice daily.

**Powder for Warts.**

Boric acid.....	1 ounce
Salicylic acid.....	1 ounce
Carbolic acid.....	$\frac{1}{2}$ dram
Zinc oxide.....	2 ounces
Eucalyptol .....	$\frac{1}{2}$ dram

Mix well and sift. Apply dry night and morning.

**Powder for Warts.**

Bismuth subnitrate.....	1 ounce
Salicylic acid.....	1 ounce
Calomel .....	4 ounces
Thymol .....	1 dram

Mix well. Apply dry.

**Wart Solution.**

One part each of salicylic acid and lactic acid, and 8 parts by weight of collodion. Mix. Apply twice a day.

**Wart Solution.**

Salicylic acid.....	1 dram
Lactic acid.....	1 dram
Carbolic acid.....	10 grains
Alcohol .....	2 drams
Flexible collodion.....	1 ounce

Mix and apply twice a day.

**Caustic Collodion for Syphilitic Warts.**

A mixture of 10 grains of corrosive sublimate with 2 drams of collodion.

**Caustic for Warts.**

Corrosive sublimate.....	15 grains
Ammonium chloride.....	15 grains
Carbolic acid.....	15 drops
Salicylic acid.....	$\frac{1}{2}$ dram
Alcohol .....	$\frac{1}{2}$ ounce
Collodion, enough to make	2 ounces

Mix and dissolve. Apply carefully with a small brush.

**BOILS, CARBUNCLES.****Boils.**

Ichthyol .....	1 dram
Lead plaster.....	2 drams
Resin plaster.....	1 dram

Mix. Apply to the part.

**Boils.**

Lanolin .....	1 ounce
Almond oil.....	1 ounce
Cocaine, powdered.....	15 grains
Extract of belladonna.....	$\frac{1}{2}$ dram

Mix well and keep the boil covered with it.

**Boils.**

Chlorinated lime.....	2 ounces
Camphor water.....	4 ounces
Tincture of myrrh.....	2 drams
Creosote .....	20 minims
Glycerin .....	1 ounce

Mix. Apply constantly in the form of wet compresses.

**Boils.**

Menthol .....	10 grains
Extract of arnica.....	$\frac{1}{2}$ dram
Extract of belladonna.....	$\frac{1}{2}$ dram
Ointment of zinc oxide...	1 ounce

Mix. Spread the ointment on a piece of old muslin, and keep the boil constantly so covered.

**Boils.**

Carbolic acid.....	$\frac{1}{2}$ dram
Tincture of myrrh.....	1 ounce
Camphor .....	2 drams
Glycerin .....	2 ounces
Water, enough to make...	8 ounces

Dissolve the camphor in the tincture and add the other ingredients. Apply as wet compress.

**Boils.**

Extract of opium.....	15 grains
Extract of belladonna.....	$\frac{1}{2}$ dram
Menthol .....	12 grains
Zinc ointment.....	1 ounce

Mix. Keep the boil covered with the salve.

**Boils.**

Ointment of subacetate of lead .....	3 drams
Iodol .....	$\frac{1}{2}$ dram
Ointment of zinc oxide...	3 drams

Mix. Apply to the surface.

**Boils.**

Lead acetate.....	$\frac{1}{2}$ dram
Aristol .....	$\frac{1}{2}$ dram
Zinc oxide.....	1 dram
Lard, enough to make...	1 ounce

Mix. Apply to the boil and cover with muslin.

**Boils.**

Cocaine .....	15 grains
Lanolin .....	$\frac{1}{2}$ ounces
Sodium bicarbonate.....	2 drams
Olive oil, enough to make a soft ointment.	

Mix.

**Boils.**

Ichthyol .....	1 ounce
Thymol iodide.....	$\frac{1}{4}$ ounce
Rosin cerate.....	$2\frac{3}{4}$ ounces

Mix, and apply twice a day.

**Ointment for Boils.**

Salicylic acid.....	2 drams
Soap plaster.....	2 ounces
Lead plaster.....	1 ounce

Mix at a gentle heat.

**Ointment for Boils.**

Zinc oxide.....	1 dram
Salicylic acid.....	2 drams
Soft soap.....	$\frac{1}{2}$ ounce
Ointment, enough to make	3 ounces

Mix well and apply.

**Ointment for Boils.**

Extract of opium.....	$\frac{1}{2}$ dram
Extract of belladonna.....	$\frac{1}{2}$ ounce
Salicylic acid.....	2 drams
Zinc ointment.....	2 ounces

Mix. Apply morning and night.

**Ointment for Boils.**

Rosin .....	1 pound
Mutton tallow.....	1 ounce
Beeswax .....	$\frac{1}{2}$ ounce
Burgundy pitch.....	$\frac{1}{2}$ ounce
Balsam fir.....	$\frac{1}{4}$ ounce
Venice turpentine.....	$\frac{1}{4}$ ounce
Oil of spike .....	1 dram
Oil of hemlock .....	1 dram
Oil of cedar .....	1 dram
Oil of origanum .....	1 dram
Oil of wormwood .....	1 dram
Laudanum .....	1 dram
Pulverized camphor.....	1 dram

Melt the rosin, tallow, beeswax and pitch together. When a little cool, add the oils, laudanum, etc.; stir in the pulverized camphor, and pour into cold water; then, by greasing the hands, it can be pulled and worked until it becomes intimately mixed, when it can be rolled into suitable sized sticks.

**Carbuncle.**

Take 2 ounces of sodium bicarbonate. Dust it over the carbuncle, and allow the soda to remain until the skin becomes covered with a good many little openings. Then apply a poultice to the part, and follow with a soothing ointment.

**Carbuncle.**

Saturated solution of sodium bicarbonate. Apply warm by means of a compress. After applying for 24 hours, use a flaxseed poultice.

**Carbuncles and Boils.**

Red oxide of mercury.....	1 dram
Carbolic acid.....	10 grains
Camphor .....	20 grains
Menthol .....	15 grains
Morphine sulphate.....	5 grains
Cocaine hydrochloride.....	5 grains
Lanolin .....	$\frac{1}{2}$ ounce
Vaseline .....	$\frac{1}{2}$ ounce

Triturate the carbolic acid, camphor and menthol until liquefied; then add the morphine and cocaine, and lastly the red oxide of mercury. Apply constantly and freely, with no poultices.

**Carbuncles.**

Cocaine hydrochloride.....	15 grains
Extract of opium.....	$\frac{1}{2}$ dram
Red oxide of mercury.....	3 drams
Camphor .....	2 drams
Carbolic acid.....	$\frac{1}{2}$ dram
Thymol .....	10 grains
Lanolin .....	1 ounce
Benzoinated lard, enough to make.....	4 ounces

Mix. Rub the first six ingredients together in a mortar, add the lanolin and lard, and mix well. If this salve is applied constantly, no poultice will be needed.

**Carbuncle Ointment.**

Take  $\frac{1}{2}$  dram of opium to 2 ounces of white ointment; of this spread on a linen rag a sufficient quantity, to the thickness of the back of a knife. This is to be renewed 3 or 4 times daily.

**Carbuncle Ointment.**

Red oxide of mercury....	2 drams
Powdered opium.....	1 dram
Zinc ointment.....	2 ounces

Mix and apply in a thick layer.

**Felons.**

Compound rosin ointment	$\frac{1}{2}$ ounce
Ointment of nitrate of mercury .....	$\frac{1}{2}$ ounce
Cocaine hydrochloride.....	10 grains

Mix. Apply before or after making a free incision with the lancet. Previously, hot poultices are frequently applied to the part. Painting it with iodine is sometimes practiced.

**Felons.**

Compound rosin ointment.	1 ounce.
Ichthyol .....	2 drams
Cocaine hydrochloride.....	10 grains

Mix, and apply as directed in the preceding.

**To Remove Bone Felon.**

Prepare a poultice from equal parts of powdered soap and desiccated salt, and enough balsam of fir to make a mass. The mixture is applied twice daily for 3 days, when it will have made a hole to the bone, and the "core" is then easily taken out.

**Whitlow Felon.**

Tincture of opium.....	2 ounces
Lead water.....	2 ounces

Mix. Use on the part a piece of thin, old muslin, keeping the surface constantly wet with the solution. The part sometimes requires lancing to relieve pain and to restore it to healthy action.

**Whitlow Felon.**

Powdered opium.....	2 drams
Lead acetate.....	1 dram
Witchhazel water.....	8 ounces

Mix. Shake and apply as in the preceding formula.

## ALCOHOLISM, OPIUM HABIT, ETC.

**Alcoholism.**

Tincture of capsicum.....	$\frac{1}{2}$ ounce
Potassium bromide.....	$\frac{1}{2}$ ounce
Tincture of nux vomica..	2 drams
Aromatic spirit of ammonia	3 ounces
Syrup of tolu, enough to make .....	6 ounces

Mix. A dessertspoonful in water 4 or 5 times daily.

**Alcoholism.**

Ammonium bromide.....	$\frac{1}{2}$ ounce
Strychnine sulphate.....	1 grain
Tincture of ginger.....	1 ounce
Aromatic spirit of ammonia	3 ounces
Water, enough to make...	8 ounces

Mix. One or two teaspoonfuls in water every 3 hours.

**Alcoholism.**

Tincture of nux vomica..	1 dram
Compound tincture of gen- tian .....	3 drams
Essence of lemon.....	6 minims
Spirit of chloroform.....	1 dram
Water, enough to make...	6 ounces

Mix. One-sixth to be taken 3 or 4 times daily for insomnia.

**Alcoholism.**

Tincture of cinchona comp.	1 ounce
Tincture of nux vomica..	3 drams
Spirit of peppermint.....	1 dram
Chloroform water, enough to make.....	8 ounces

Mix. Dose, a tablespoonful every 3 hours.

**Alcoholism.**

Compound tincture of gen- tian .....	2 ounces
Compound tincture of ca- lumba .....	2 ounces
Tincture of nux vomica..	80 minims

Mix. A dessertspoonful before each meal for rum stomach.



**Anti-Spree Mixture.**

Pepsin ..... 1 dram  
 Pure water..... 10 ounces  
 Concentrated hydrochloric acid ..... 1 dram  
 Oil of sassafras..... 10 drops  
 Mix. Shake well. Take a tablespoonful every half hour.

**Alcoholism.**

Tincture of cinchona comp. 2 ounces  
 Tincture of gentian comp. 2 ounces  
 Tincture of calumba..... 2 ounces  
 Tincture of nux vomica... 2 drams  
 Mix. A dessertspoonful every 4 hours.

**Alcoholism.**

Ammonium bromide..... ½ ounce  
 Potassium bromide..... ½ ounce  
 Strychnine sulphate..... 1 grain  
 Tincture of gentian comp. 3 ounces  
 Water, enough to make... 8 ounces  
 Mix. One or two teaspoonfuls 3 times a day.

**Jimjams.**

Tincture of nux vomica... ½ fl. ounce  
 Tincture of capsicum..... ½ fl. ounce  
 Tincture of digitalis..... ½ fl. ounce  
 Fluidextract of pilocarpus ½ fl. ounce  
 Fluidextract of erythroxylon ..... 2 fl. ounces  
 Fluidextract of valerian.. 2 fl. ounces  
 Simple syrup, enough to make ..... 8 fl. ounces  
 Mix. Half fluid ounce every two or three hours, or until marked diaphoresis appears.

**Jimjams.**

Potassium bromide..... 240 grains  
 Chloral hydrate..... 120 grains  
 Solution of morphine (Malgendie) ..... 40 minims  
 Syrup of orange peel..... 1 fl. ounce  
 Water, enough to make... 4 fl. ounces  
 Mix. Dose, half fluid ounce as directed.

**Jimjams.**

Tincture of cinchona ..... 1 ounce  
 Tincture of gentian ..... 1 ounce  
 Tincture of ginger ..... 1 ounce  
 Tincture of valerian ..... 1 ounce  
 Wine of coca, enough to make ..... 8 ounces  
 Mix. A tablespoonful every 3 hours.

**Jimjams.**

Chloral hydrate..... 2 drams  
 Potassium bromide..... ½ ounce  
 Heroin hydrochloride..... 1 grain  
 Peppermint water, enough to make..... 8 ounces  
 Mix and dissolve. Dose, one tablespoonful every 2 hours till asleep.

**Jimjams.**

Potassium bromide..... 4 drams  
 Chloral hydrate..... 3 drams  
 Tincture of strophanthus.. 2 drams  
 Syrup of ginger..... 2 ounces  
 Chloroform water, enough to make..... 8 ounces  
 Mix. Dose, a tablespoonful every 3 hours.

**Remedy for Drunkenness.**

Catechu ..... 1 ounce  
 Cinchona, powdered..... ½ ounce  
 Aromatic powder..... ¼ ounce  
 Mix. A teaspoonful three times a day.  
 Drink plenty of coffee.

**Jimjams.**

Potassium bromide..... 1 ounce  
 Chloral ..... ½ ounce  
 Tincture of digitalis ..... 1 fl. ounce  
 Tincture of capsicum ..... 1 fl. ounce  
 Tincture of ginger ..... 1 fl. ounce  
 Aromatic spirit of ammonia 1 fl. ounce  
 Tincture of ginger ..... 1 fl. ounce  
 Water, enough to make... 8 fl. ounces  
 Mix. Dose: a teaspoonful.

**Remedy for Drunkenness.**

Tincture of cinchona comp. 2 ounces  
 Tincture of catechu..... 2 ounces  
 Tincture of ginger..... 2 ounces  
 Mix. A tablespoonful 3 times a day.

**Drunkard's Sleeplessness.**

Morphine sulphate..... 4 grains  
 Hydrochloric acid..... 10 drops  
 Tincture of gentian ..... 1 ounce  
 Tincture of quassia ..... 1 ounce  
 Tincture of calumba ..... 1 ounce  
 Tincture of nutgalls..... 1 ounce  
 Mix. Dose, a teaspoonful several times a day.

**Drunkard's Sleeplessness.**

Chloral hydrate..... 2 drams  
 Potassium bromide..... ½ ounce  
 Heroin hydrochloride..... 1 grain  
 Tincture of gentian comp. 2 ounces  
 Chloroform water, enough to make..... 8 ounces  
 Mix. Dose, a tablespoonful every 2 hours.

**Opium Habit.**

Strychnine sulphate..... ½ grain  
 Tincture of belladonna.... 3 drams  
 Tincture of capsicum..... 3 drams  
 Mix. Ten drops every three hours, increasing three drops daily.

**Opium Habit.**

Strychnine sulphate..... ½ grain  
 Compound tincture of gentian ..... 2 ounces  
 Compound tincture of cinchona ..... 2 ounces  
 Mix. Teaspoonful before each meal as a stimulant to the appetite and nervous system.

**Opium Habit.**

Tincture of belladonna... ½ ounce  
 Tincture of nux vomica .. ½ ounce  
 Tincture of ginger ..... 7 ounces  
 Mix. A teaspoonful every three hours.

**Opium Habit.**

Strychnine sulphate..... ½ grain  
 Atropine sulphate..... 1-5 grain  
 Tincture of cardamom comp. 1 ounce  
 Chloroform water, enough to make..... 4 ounces  
 Mix. A teaspoonful before meals.

**Opium Habit.**

Tincture of cannabis indica 40 minims  
 Spirit of ether..... 1 dram  
 Water, enough to make.. 1 ounce  
 Mix. One dose if insomnia is very protracted.

**Opium Habit.**

Tincture of gentian comp. 1 ounce  
 Tincture of cannabis indica 2 drams  
 Spirit of ether comp..... ½ grain  
 Syrup of tolu, enough to make ..... 4 ounces  
 Mix. A tablespoonful 3 times a day.

**Opium Habit.**

Tincture of capsicum.....	4 drams
Potassium bromide.....	4 drams
Aromatic spirit of ammonia	3 ounces
Camphor water, enough to make .....	6 ounces

Mix. A dessertspoonful several times daily in the depression of alcoholism and opium habit.

**WHOOPIING COUGH.****Whooping Cough.**

Chloral .....	1 dram
Potassium bromide.....	2 drams
Syrup of wild cherry.....	1 ounce
Water .....	1 ounce

Mix. A teaspoonful three times a day.

**Whooping Cough.**

Camphor, monobromated...	48 grains
Mucilage of acacia.....	1 or 2 ounces
Syrup of tolu.....	2 ounces

Mix. Teaspoonful for a dose.

**Whooping Cough.**

Ammonium bromide.....	1 dram
Sodium bromide.....	2 drams
Chloral hydrate.....	2 drams
Syrup of tolu.....	2 ounces
Water, enough to make...	4 ounces

Mix. A teaspoonful 3 times a day.

**Whooping Cough.**

Ammonium bromide.....	2 drams
Camphor, monobromated...	1 dram
Syrup of wild cherry.....	2 ounces
Mucilage of acacia.....	2 ounces

Mix. A teaspoonful 3 times a day.

**Whooping Cough.**

Nitric acid, dilute.....	1 dram
Syrup .....	4 ounces
Distilled water.....	4 ounces
Tincture of belladonna...	16 drops

Mix. One teaspoonful every hour for a two-year-old child.

**Whooping Cough.**

Terpin hydrate.....	1 to 1.5 grams
Antipyrine .....	1.0 gram
Syrup of orange peel.....	50.0 grams
Linden water (or mucilage .....	60.0 grams

Mix. One to two teaspoonfuls a day to a child one to four years old.

**Whooping Cough.**

Tincture of belladonna...	10 drops
Tincture of cardamom comp.	½ ounce
Nitric acid, dilute.....	1 dram
Syrup of tolu, enough to make .....	4 ounces

Mix. One teaspoonful every 3 hours.

**Whooping Cough.**

Flowers of sulphur, 8 to 15 grains; sugar of milk, 16 grains; divide into 10 powders, one every two hours. Tonic medicines (iron, quinine, etc.) must be given at the same time.

**Whooping Cough Candle.**

Wood creosote.....	2 drams
Carbolic acid.....	1 dram
Naphthalene.....	3 drams
Saltpetre .....	1 dram
Coal tar.....	3 drams
Powdered aconite leaves..	3 ounces
Mucilage of tragacanth, quantity sufficient.	

Make into a mass to form pastilles, each to weigh 1 dram. One pastille is sufficient for a room of ordinary height with 100 square feet floor space. Use twice a day, one hour each time.

**Ammonium Picrate Mixture for Whooping Cough.**

Ammonium picrate.....	1 grain
Ammonium chloride.....	24 grains
Powdered extract of licorice	1 dram
Water .....	3 ounces

Mix. The dose for a child 6 months old or under is a teaspoonful every three hours, doubling the dose for a child 1 to 2 years old.

**Whooping Cough.**

Ammonium chloride.....	½ dram
Ammonium bromide.....	1 dram
Tincture of belladonna...	20 drops
Tincture of opium, camphor- ated .....	½ ounce
Syrup, enough to make...	4 ounces

Mix. A teaspoonful every 3 hours.

**Whooping Cough.**

Terpin hydrate.....	16 grains
Potassium guaiacol-sulpho- nate .....	½ dram
Potassium bromide.....	1 dram
Syrup of tolu.....	2 ounces
Chloroform water, enough to make.....	4 ounces

Mix. A teaspoonful every 3 hours.

**Inhalation in Whooping Cough.**

Thymol .....	20 grains
Carbolic acid.....	2 drams
Oil of sassafras.....	2 drams
Oil of eucalyptus.....	2 drams
Liquid tar.....	2 drams
Oil of turpentine.....	2 drams
Ether .....	4 fl. drams
Alcohol, enough to make..	3 fl. ounces

Mix. Put about thirty drops upon a pad of such a size as to be conveniently hung around the child's neck, renewing the application every two or three hours.

**Whooping Cough, Internal Remedy.**

In severe cases the inhalation treatment is supplemented by the internal administration of

Carbolic acid.....	3 grains
Sodium bromide.....	1 dram
Tincture of belladonna...	20 drops
Glycerin .....	3 drams
Water, enough to make...	2 ounces

Mix. Teaspoonful for a child three or four years, occasionally.

**Vichot's Nitro-Resinous Troches (for Whooping Cough).**

Charcoal, in fine powder..	750 parts
Potassium nitrate.....	20 parts
Naphthalene .....	100 parts
Creosote .....	80 parts
Carbolic acid.....	40 parts
Tar .....	100 parts
Aconite leaves, powdered	7.50 parts
Mucilage of tragacanth, quantity sufficient.	

Mix and make into troches of 4 grains (1 dram each). Burn one night and morning in the closed bedroom of the patient, if it has a capacity of 350 cubic feet; if it be larger, burn two. The inhalation should last for about one hour. The average time of treatment is 7 days.

## HEADACHE REMEDIES.

### Headache Remedy.

Ammonium chloride.....	3 drams
Morphine acetate.....	1 grain
Caffeine citrate.....	½ dram
Aromatic spirit of ammonia	1 dram
Elixir of guarana.....	4 ounces
Rose water.....	4 ounces

Mix. Dose, a dessertspoonful every quarter hour until relieved.

The morphine acetate may be omitted if desired.

### Headache Mixture.

Sodium bicarbonate.....	1½ drams
Antipyrine .....	40 grains
Caffeine citrate.....	10 grains
Ammonium bromide.....	1½ drams
Chloroform water, enough	
to make.....	4 ounces

Mix. A tablespoonful every 2 hours till relieved.

### Headache Mixture.

Caffeine citrate.....	12 grains
Sodium bromide.....	3 drams
Aromatic spirit of ammonia	3 drams
Elixir of guarana, enough	
to make.....	2 ounces

Mix. A teaspoonful every hour.

### Headache Drops.

Caffeine citrate.....	25 grains
Chloral hydrate.....	½ ounce
Morphine sulphate.....	4 grains
Peppermint water, enough	
to make.....	1 ounce

Mix. Dose, 10 to 15 drops on sugar every 2 hours.

### Headache (Rebellious).

Antipyrine .....	4 parts
Phenacetin .....	2 parts
Antifebrin .....	1 part

Mix. Dose, from 5 to 10 grains, as may be required.

### Headache Powders.

Phenacetin .....	2 grains
Sodium bicarbonate.....	5 grains
Caffeine citrate.....	½ grain

Mix. One powder every 2 hours.

### Migraine.

Extract of ergot .....	2 drams
Extract of henbane .....	1 scruple
Extract of cannabis indica.	1 scruple
Extract of nux vomica ...	1 scruple
Quinine sulphate.....	1 dram
Iron sulphate.....	½ dram

Mix and make into 40 pills.

Take 1 pill every 3 hours until relieved; then take one before each meal, or every morning and night.

### Migraine Powders.

Camphor, monobromated...	½ grain
Antifebrin .....	2 grains
Sodium bicarbonate.....	5 grains
Phenacetin .....	2 grains

Mix. One powder every 2 hours.

### Sick Headache.

Sodium bicarbonate.....	1 dram
Bismuth subcarbonate.....	1 dram
Powdered gum arabic.....	1 dram
Aromatic spirit of ammonia	2 drams
Ammonium bromide.....	1½ drams
Syrup of ginger.....	3 drams
Distilled water, enough	
to make .....	8 ounces

Mix. A tablespoonful every hour.

### Sick Headache.

Sodium bicarbonate.....	2 drams
Tincture of nux vomica...	2 drams
Tincture of gentian comp...	½ ounce
Ammonium bromide.....	1½ drams
Peppermint water, enough	
to make.....	4 ounces

Mix. A tablespoonful every 2 hours.

### Headache Drops.

Castor, gentian and valerian roots, bruised, ¼ ounce each; laudanum, 1 ounce; sulphuric ether, 1½ ounces; alcohol, ½ pint; water, ½ pint. Put all into a bottle and let stand about 10 days. Dose, a teaspoonful as often as required, or 2 or 3 times daily.

### Headache Essence.

Oil of lavender.....	4 drams
Camphor .....	2 ounces
Stronger water of ammonia	2 ounces
Alcohol .....	14 ounces

Mix. Fragrant, stimulant, and may be used as a rubefacient in local pains.

### Headache Cologne.

Menthol .....	1 dram
Camphor .....	2 drams
Oil of lavender.....	1 dram
Oil of lemon.....	1 dram
Cologne water, enough to	
make .....	8 ounces

Mix and dissolve. Use as a lotion.

### Headache Cologne.

Menthol .....	1 dram
Eucalyptol .....	½ dram
Oil of neroli .....	10 drops
Oil of bergamot .....	1 dram
Oil of lemon .....	1 dram
Alcohol, enough to make..	8 ounces

Mix. For external application to the forehead.

### Headache Pills.

Codeine .....	17 grains
Extract of coca.....	90 grains
Caffeine citrate.....	100 grains
Quinine valerianate.....	100 grains
Arsenous acid.....	1 grain

Mix and divide into 100 pills.

### Headache Pills.

Caffeine citrate.....	100 grains
Quinine salicylate.....	150 grains
Strychnine sulphate.....	1 grain
Camphor, monobromated..	50 grains

Mix. For one dose. To be repeated, if necessary, in 2 hours.

### Headache Powders.

Caffeine citrate.....	1 grain
Phenacetin .....	3 grains
Milk sugar.....	3 grains

Mix. For one dose. To be repeated, if necessary, in 2 hours.

### Headache Powders.

Phenacetin .....	300 grains
Caffeine .....	15 grains
Sodium salicylate.....	15 grains
Quinine hydrochloride....	200 grains
Morphine hydrochloride...	5 grains
Sugar of milk.....	64 grains
Saccharin .....	1 grain
Excipient, sufficient.	

Mix, and divide into 100 powders. Dose, one or two powders.



**Headache Powders.**

Phenacetin .....	3 grains
Sodium bromide.....	5 grains
Sodium bicarbonate.....	5 grains
Aromatic powder.....	2 grains

Mix. For one dose. Repeat in 2 hours.

**Headache Powders.**

Antifebrin .....	3 grains
Caffeine citrate.....	1 grain
Guarana, powdered.....	1 grain
Sugar of milk.....	10 grains

Mix. For one powder. Repeat in 2 or 3 hours.

**Headache Powders.**

Phenacetin .....	3 grains
Cinchonidine salicylate..	1 grain
Aspirin .....	3 grains
Caffeine citrate.....	1 grain
Sugar of milk.....	7 grains

Mix. For one dose. Repeat in 2 hours.

**NEURALGIA.****Neuralgia.**

Ammonium bromide.....	1 dram
Sodium salicylate.....	1 dram
Tincture of hyoscyamus..	2 drams
Water, enough to make...	4 ounces

Mix. One teaspoonful every half hour until relief is obtained, or four doses have been taken.

**Neuralgia Mixture.**

Tincture of belladonna ...	1 ounce
Tincture of camphor .....	1 ounce
Tincture of arnica .....	1 ounce
Tincture of opium .....	1 ounce

Mix. Apply over the seat of pain, and give 10 to 20 drops in sweetened water every 2 hours.

**Anti-Neuralgic Mixture.**

Tincture of gelsemium....	2 fl. drams
Ammoniated tincture of quinine .....	½ fl. ounce
Glycerin .....	½ fl. ounce
Water .....	4 fl. ounces

Mix. Dose, a tablespoonful every 4 hours in water.

**Neuralgia.**

Exalgine .....	32 grains
Tincture of gelsemium....	3 fl. drams
Alcohol .....	1 ounce
Syrup of orange flowers, enough to make.....	2 fl. ounces

Mix. One small teaspoonful to be taken every 3 hours until pain is relieved.

**Neuralgia Mixture.**

Potassium bromide.....	4 drams
Sodium bromide.....	2 drams
Ammonium bromide.....	2 drams
Tincture of hyoscyamus..	2 drams
Chloroform water, enough to make.....	4 ounces

Mix. One tablespoonful every hour till better. Stop after 4 doses.

**Neuralgia Mixture.**

Tincture of nux vomica....	½ dram
Tincture of gelsemium ....	½ dram
Tincture of valerian, ammoniated .....	1½ drams
Peppermint water, enough to make.....	4 ounces

Mix. A tablespoonful every 3 or 4 hours.

**Neuralgia Mixture.**

Tincture of gelsemium....	3 drams
Strontium bromide.....	5 drams
Water, enough to make...	4 ounces

Mix. A teaspoonful every 3 hours.

**Neuralgia Mixture.**

Tincture of opium .....	½ ounce
Tincture of belladonna ...	½ ounce
Tincture of ginger .....	1 ounce
Spirit of camphor .....	1 ounce
Spirit of peppermint.....	1 ounce

Mix. Give 10 to 20 drops on a lump of sugar. Can also be used as a liniment on the painful parts.

**Pills for Neuralgia.**

Ipecac .....	60 grains
Quinine .....	100 grains
Strychnine .....	1 grain
Iron by hydrogen.....	25 grains

Mix and divide into 30 pills and take one 3 times a day.

**Neuralgia.**

Arsenic iodide.....	1 grain
Extract of belladonna....	8 grains
Morphine valerianate.....	8 grains
Extract of gentian.....	5 grains
Fluidextract of aconite root .....	5 minims

Mix and make into 60 pills. One to three in 24 hours.

**Neuralgia Pills.**

Strychnine .....	1 grain
Phenacetin .....	120 grains
Cinchonidine .....	60 grains
Ipecac .....	10 grains
Arsenous acid.....	1 grain

Mix and make 60 pills. One or two every 3 hours.

**Neuralgia Pills.**

Heroin .....	3 grains
Phenacetin .....	180 grains
Salol .....	120 grains
Ipecac .....	12 grains

Mix and make 60 pills. One or two every 3 hours.

**Neuralgia.**

Antipyrine .....	3 drams
Caffeine .....	½ dram
Extract of cannabis indica.	5½ grains
Extract of aconite.....	5½ grains
Hyoscine hydrobromide....	1/3 grain

Mix and make into 30 capsules.. One to be taken every 3 or 5 hours.

**Neuralgia Capsules.**

Caffeine .....	1 grain
Extract of aconite.....	1/6 grain
Aspirin .....	5 grains
Heroin .....	1/20 grain

Mix. For one dose. Repeat in 2 hours.

**Neuralgia.**

Iron by hydrogen.....	½ dram
Zinc oxide .....	½ dram
Zinc cyanide .....	3 grains
Extract of cannabis indica	½ dram

Mix and make 30 pills.

One pill after each meal, or in acute cases one every hour for five doses.

**Ointment for Neuralgia.**

Tincture of aconite .....	¼ ounce
Tincture of chloroform ...	¼ ounce
Lard .....	2 ounces

Mix. After applying the ointment, the parts are covered with cotton.

**Anti-Neuralgic Ointment.**

Menthol .....	2 drams
Cocaine .....	½ dram
Chloral hydrate.....	½ dram
Petrolatum .....	4 ounces

Mix. Apply to the painful part.

**Neuralgia Ointment.**

Menthol .....	20 grains
Morphine .....	10 grains
Aconitine .....	1 grain
Benzoinated lard.....	1 ounce

Mix. Apply with massage.

**Neuralgia Lotion.**

Menthol .....	1 dram
Morphine .....	10 grains
Tincture of aconite.....	2 ounces
Cologne water, enough to make .....	8 ounces

Mix. Apply with a compress.

**Neuralgic Pills.**

Iron phosphate.....	440 grains
Tragacanth, powdered.....	120 grains
Quinine sulphate.....	2½ ounces
Extract of henbane.....	2 ounces
Extract of aloes socotrine. ½ ounce	
Acetic extract of colchi- cum .....	½ ounce
Camphor .....	160 grains

Mix and divide into 3½ grain pills. One to be taken every 3 hours until relief is obtained, then one twice a day for a few days.

**Neuralgic Tablets.**

Quinine sulphate.....	½ grain
Morphine sulphate.....	1/10 grain
Strychnine sulphate.....	1/120 grain
Arsenous acid.....	1/80 grain
Extract of aconite.....	½ grain

Mix. For one tablet. To be repeated every hour.

**For Insomnia.**

Chloral .....	2 drams
Potassium bromide.....	3 drams
Tincture of opium.....	1 dram
Syrup of orange peel.....	3 drams
Water, enough to make...	2 ounces

Mix. Dose, a teaspoonful.

**For Insomnia.**

Strontium bromide.....	4 drams
Chloral .....	2 drams
Heroin hydrochloride.....	2 grains
Water, enough to make...	4 ounces

Mix. A teaspoonful every 2 hours.

**Cerebral Sedative.**

Chloral hydrate.....	2 drams
Potassium bromide.....	2 drams
Fluidextract of gelsemium.	50 minims
Tincture of opium.....	40 minims
Simple elixir, enough to make .....	1 ounce

Mix. Dose, one-half teaspoonful.

**Nervous Sedative.**

Tincture of opium .....	3 drams
Tincture of gelsemium .....	2 drams
Tincture of valerian, am- moniated .....	4 drams
Elixir, enough to make...	4 ounces

Mix. A teaspoonful as required.

**Mixture for Epilepsy, Brown-Sequard.**

Sodium bromide.....	180 grains
Potassium bromide.....	180 grains
Ammonium bromide.....	180 grains
Potassium iodide.....	90 grains
Ammonium iodide.....	90 grains
Ammonium carbonate .....	60 grains
Tincture of calumba.....	1½ fl. ounces
Water, enough to make...	8 fl. ounces

Mix. Dose, 1½ drams before meals and 3 drams at bedtime.

**Epileptic (Conium) Mixture.**

Potassium bromide.....	1 ounce
Fluidextract of conium....	½ ounce
Water, enough to make...	4 ounces

Mix. Take a teaspoonful three times a day.

## KIDNEY AND LIVER REMEDIES.

**Kidney and Liver Mixture.**

Nitrohydrochloric acid, di- lute .....	5 minims
Potassium nitrate.....	5 grains
Dandelion juice.....	20 minims
Tincture of buchu.....	15 minims
Fluidextract of pareira....	15 minims
Fluidextract of glycyrrhiza	15 minims
Tincture of mandrake.....	5 minims
Spirit of juniper.....	10 minims
Water, enough to make...	½ ounce

Mix. For one dose.

**Kidney Mixture.**

Fluidextract of buchu .....	1 ounce
Fluidextract of bearberry .	1 ounce
Fluidextract of podophyllum	2 drams
Fluidextract of phytolacca.	4 drams
Syrup, enough to make...	8 ounces

Mix. One or two teaspoonfuls every 3 hours.

**Kidney and Liver Cure.**

Liverwort .....	4 ounces
Jamaica dogwood.....	1 ounce
Ergot .....	2 ounces
Couch grass.....	4 ounces
Wintergreen .....	2 ounces
Potassium nitrate.....	1 av. ounce
Alcohol .....	2 pints
Glycerin .....	12 fl. ounces
Water, sufficient quantity to make.....	1 gallon

Grind the drugs to No. 20 or 30 powder, percolate with all the glycerin and alcohol mixed with 2 quarts of water. When the menstruum thus made has all passed, add enough hot water to make 1 gallon, add the nitrate of potash and dissolve.

Dose: One tablespoonful 3 times a day.

**Kidney and Liver Mixture.**

Potassium nitrate .....	1 ounce
Potassium acetate .....	1 ounce
Fluidextract of liverwort..	1 ounce
Fluidextract of Jamaica dogwood .....	½ ounce
Fluidextract of triticum....	1 ounce
Glycerin .....	4 ounces
Water, enough to make...	1 pint

Dose, one or two teaspoonfuls every 3 hours.

**Liver Medicine.**

Fluidextract of buchu.....	1 ounce
Fluidextract of senna.....	1 ounce
Fluidextract of snakeroot..	1 ounce
Fluidextract of wild cherry	1 ounce
Fluidextract of cinchona...	1 ounce
Glycerin .....	3 ounces

Mix. Dose: One or two teaspoonfuls.

**Kidney Tonic.**

Chicory root.....	9 ounces
Couch grass.....	2 ounces
Red clover.....	1 ounce
Dulcamara .....	2 ounces

Dry carefully and powder all together.

A heaping teaspoonful for a cup of infusion.

**Kidney and Liver Remedy.**

Hepatica .....	1 ounce
Hydrangea .....	1 ounce
Scoparius .....	1 ounce
Apocynum cannabinum....	1 ounce
Triticum .....	1 ounce
Hot water, sufficient to make .....	10 ounces
Potassium nitrate.....	320 grains
Alcohol .....	3 ounces
Syrup .....	3 ounces

Fluidextracts may be substituted for the crude drugs, in which case the alcohol in the above formula is omitted, and the proportion of water reduced to 5 ounces, instead of 10, as above, the remaining ingredients being left the same.

Dose: One or two teaspoonfuls.

**Liver Medicine.**

Senna .....	13 ounces
Buchu .....	2 ounces
Serpentaria .....	6 ounces
Bitter root.....	4 ounces
Wild cherry.....	4 ounces
Cinchona .....	4 ounces

Digest the senna and buchu for 24 hours with 10 pints of boiling water, then add 6 pints diluted alcohol, and let stand 24 hours longer; express. Treat likewise the serpentaria and bitter root with 6 pints of boiling water, and add 2 pints diluted alcohol as above; express. Treat likewise the wild cherry and cinchona with 4 pints of boiling water, add 2 pints diluted alcohol and express. Mix all these expressions, let stand 24 hours, and strain.

Dose: One tablespoonful.

**Kidney and Liver Mixture.**

Fluidextract of liverwort..	1 ounce
Fluidextract of hydrangea.	1 ounce
Fluidextract of broom.....	1 ounce
Fluidextract of Indian hemp .....	1 ounce
Fluidextract of couch grass .....	1 ounce
Fluidextract of buchu.....	1 ounce
Glycerin .....	2 ounces

Mix. Dose: One or two teaspoonfuls 3 times a day.

**Kidney Tea.**

Buchu .....	2 parts
Uva ursi.....	2 parts
Juniper .....	1 part

In coarse powder.

Mix and make an infusion of a teaspoonful to a cup of hot water.

**Liver Tea.**

Senna .....	1 ounce
Buchu .....	1 ounce
Juniper .....	1 ounce
Fennel .....	½ ounce
Coriander .....	½ ounce
Alcohol .....	8 ounces
Boiling water, enough to make .....	4 pints

Infuse the drugs, in coarse powder, and mixed in 4 pints of boiling water for 1 hour. Strain and express, add the alcohol and enough water to make 4 pints. A wineglassful 3 times a day.

**Diuretic Species.**

Juniper berries.....	1 ounce
Pansy (viola tri-color.)..	4 ounces
Lovage root.....	2 ounces

Mix and make a tea with 4 pints of boiling water. Drink freely.

**Diuretic Tea.**

Lovage root.....	1 ounce
Rest harrow root.....	1 ounce
(Ononidis.)	
Licorice root.....	1 ounce
German stoechadis flowers	1 ounce
(Stoechadis citrinae.)	
Juniper berries.....	1 ounce

Mix and make a tea with a gallon of boiling water. Drink freely.

**Diuretic Tea.**

Buchu, coarse powder.....	1 ounce
Juniper berries, coarse powder .....	1 ounce
Lovage root, coarse pow- der .....	1 ounce
Licorice root, coarse pow- der .....	1 ounce
Potassium nitrate.....	½ ounce

Mix and add 1 gallon of boiling water. Drink freely.

**Diuretic Wine.**

Oil of turpentine.....	2 fl. drams
Lemon juice.....	1 fl. ounce
Wine .....	4 fl. ounces

Mix. For a single dose.

**Diuretic Wine.**

Juniper berries.....	1 ounce
Buchu leaves.....	1 ounce
Triticum repens.....	1 ounce
Lovage root.....	1 ounce
White wine.....	2 pints

Reduce the drugs to coarse powder, macerate for 3 days in the wine, express and add enough wine to make 2 pints. Dose: A wineglassful three times a day.

**Diuretic Wine.**

Oil of juniper berries....	2 drams
Fluidextract of triticum..	2 ounces
Fluidextract of buchu.....	2 ounces
White wine.....	2 pints

Mix and filter with a little talc. Dose: One or two tablespoonfuls three times a day.

**Diuretic Wine.**

Powdered squill .....	5 drams
Powdered digitalis.....	10 ounces
Bruised juniper berries..	6 ounces
White wine.....	10 fl. ounces
Potassium acetate.....	2 ounces

The first three ingredients are macerated in the wine for four days, the mixture is then strained and the potassium acetate dissolved in the strained liquid.

Dose: Two teaspoonfuls in water 3 times a day.

**For Diabetes.**

Extract of bugleweed....	5 drams
Extract of liverwort.....	4 drams
Potassium nitrate.....	40 grains
Oil of wintergreen.....	8 minims
Rectified spirit.....	3 ounces
Glycerin .....	10 drams
Water, enough to make...	12 ounces

Mix. Dose, a tablespoonful 3 times a day.

**Pills Anti-Canker (Thompsonian).**

Capsicum,	
Extract of bayberry, of each, equal parts.	

Mix and make into pills of 3 grains each.



## BURNS, SCALDS, ETC.

### Burns.

Salol .....	1 dram
Olive oil.....	8 ounces
Lime water.....	8 ounces

Dissolve the salol in the oil and add the lime water.

### Burns.

Salicylic acid.....	1 dram
Olive oil.....	8 ounces

Mix. Apply to burn, covering with linen or lint.

### Burns.

Immerse the burned part in cool water, and afterward paint it with oil of peppermint.

### Burns (Carron Oil).

Linseed oil.....	1 pint
Lime water.....	1 pint

Mix and shake before applying.

### Burns.

Linseed oil.....	8 ounces
Lime water.....	8 ounces
Tincture of opium.....	$\frac{1}{2}$ ounce

Mix. Apply with a soft cloth.

### Burns.

Linseed oil.....	8 ounces
Lime water.....	8 ounces
Morphine acetate.....	4 grains

Dissolve the morphine in the lime water and add the oil.

### Burns.

Linseed oil.....	8 ounces
Lime water.....	8 ounces
Salicylic acid.....	2 drams

Dissolve the acid in the oil with the aid of heat and add the lime water.

### Burns.

Linseed oil.....	8 ounces
Lime water.....	8 ounces
Cocaine hydrochloride.....	15 grains

Dissolve the cocaine in the lime water and add the oil.

### Burns.

Boric acid.....	2 drams
Glycerin .....	2 ounces
Olive oil.....	2 ounces

Mix. Saturate a piece of old muslin or a piece of absorbent cotton, with the lotion, and use it on the painful surface.

### Burns.

Boric acid.....	3 drams
Salicylic acid.....	2 drams
Glycerin .....	2 ounces
Olive oil.....	8 ounces

Dissolve the acids in the glycerin by heat, add the oil. Shake before using.

### Burns.

Carbolic acid.....	$1\frac{1}{2}$ fl. drams
Glycerin .....	6 fl. ounces
Olive oil.....	6 fl. ounces
Solution of subacetate lead, dilute.....	3 fl. ounces

Mix and apply on cotton.

### Burns.

Lead water.....	2 ounces
Olive oil.....	4 ounces
Solution of boric acid.....	2 ounces

Mix. Shake before using.

### Burns.

Tannin cannot be too highly recommended as an application to burns, especially when very extensive, the skin being entirely removed. A 5 per cent solution is squeezed from a sponge over the denuded surface, which is then dressed with some soft ointment, either with or without tannin. Pain immediately abates, and the healing process is said to be wonderfully rapid. The solution must be freshly applied as often as the dressings are removed.

### Burns.

Bismuth subnitrate.....	2 ounces
Vaseline .....	2 ounces
Glycerin .....	2 ounces

Triturate the bismuth with the vaseline, then add glycerin until reduced to the consistency of cream.

### Burns.

Boric acid.....	1 ounce
Bismuth subnitrate.....	1 ounce
Starch .....	2 ounces

Mix. Use as a dusting powder.

### Burns and Scalds.

Solution of subacetate of lead .....	4 ounces
Tincture of opium.....	2 ounces
Distilled witchhazel.....	2 ounces

Mix. Apply to the skin with a piece of old muslin.

### Burns and Scalds.

Lead water.....	4 ounces
Laudanum .....	$\frac{1}{2}$ ounce
Cocaine hydrochloride.....	1 dram
Tincture of arnica.....	1 ounce
Witchhazel water.....	8 ounces

Mix and dissolve. Use freely.

### Burns and Scalds.

Sodium bicarbonate.....	$\frac{1}{2}$ ounce
Bismuth subnitrate.....	$\frac{1}{2}$ ounce

Mix. Keep the surface covered with the powder.

### Burns and Scalds.

Sodium bicarbonate.....	1 ounce
Bismuth subcarbonate.....	1 ounce
Boric acid.....	1 dram

Mix and dust on the scald.

### Burns and Scalds.

Creosote .....	15 drops
Cocaine hydrochloride.....	10 grains
Lime water.....	$\frac{1}{2}$ pint
Linseed oil.....	$\frac{1}{2}$ pint

Mix. Apply constantly to the skin with soft old muslin or cotton.

### Ointment for Burns.

Iodoform .....	2 drams
Spermaceti ointment.....	1 ounce
Extract of conium.....	$1\frac{1}{2}$ drams
Carbolic acid.....	10 drops

To be mixed, and spread on linen and applied twice daily to the burned surface, the part being then enveloped in oiled silk. No other dressing is required, but in cases where there is great dryness of the surface from the destruction of vitality and want of exhalation, the wound, before applying the ointment should be covered with some common lime liniment, which affords a soft and moist dressing, and in no wise interferes with the action of the iodoform, the active ingredient of the ointment.

**Burns and Scalds.**

Carbolic acid.....	½ dram
Morphine acetate.....	10 grains
Lime water.....	8 ounces
Linseed oil.....	8 ounces

Mix. Shake before using.

**Ointment for Burns.**

Thymol iodide.....	1 dram
Lanolin.....	½ ounce
Cocaine hydrochloride.....	10 grains
Vaseline, enough to make.	2 ounces

Mix well.

**Ointment Boric Acid in Burns.**

Boric acid.....	1 dram
Antipyrin.....	1 dram
Iodoform.....	12 grains
Vaseline.....	10 drams

Mix.

**Ointment for Burns.**

Boric acid.....	2 drams
Aristol.....	1 dram
Lanolin.....	4 drams
Vaseline, enough to make.	2 ounces

Mix and apply on linen or gauze.

**Fever Blisters.**

Carbolic acid.....	5 drops
Suet.....	½ ounce

Place the ingredients in a pan and mix while heating them. Frequently apply the mixture, when cold, to the lips.

**Fever Blisters.**

Alum.....	2 drams
Solution of boric acid....	4 drams
Glycerin.....	2 drams

Mix and dissolve. Apply to lips.

**Fever Blisters.**

Camphor cerate.....	4 drams
Lanolin.....	1 dram

Mix. Apply to lips.

**Fever Blisters.**

Spirit of camphor.....	4 drams
Glycerin.....	2 drams

Mix. Apply to lips.

**AGUE, CHILLS, ETC.****Ague Remedy.**

Tincture of eucalyptus...	2 ounces
Tincture of serpentaria...	4 ounces
Tincture of capsicum.....	5 drams
Tincture of myrrh.....	5 drams
Tincture of nux vomica....	2 drams
Quinine sulphate.....	60 grains
Elixir of glycyrrhiza, sufficient to make.....	16 ounces

Mix. Dose, ½ tablespoonful.

**Ague Bitters.**

Quinine, 40 grains; capsicum, 20 grains; cloves, ¼ ounce; cream of tartar, 1 ounce; whisky, 1 pint; mix. Dose, 1 to 2 tablespoonfuls every 2 hours, beginning 8 hours before the chill comes on, and 3 times daily for several days.

**Dutch Ague Remedy.**

A mixture formed of Peruvian bark and cream of tartar, of each 1 ounce; cloves, ½ dram; reduced to fine powder. Dose, 1½ drams every 3 hours.

**Ague Remedy.**

Quinine sulphate.....	2 drams
Aromatic sulphuric acid..	2 drams
Tincture of nux vomica...	3 drams
Tincture of calumba.....	2 ounces
Water, enough to make...	8 ounces

Mix. Dose, 2 teaspoonfuls after meals.

**Ague Remedy.**

Cinchonidine sulphate....	2 drams
Fowler's solution.....	½ ounce
Tincture of capsicum.....	2 drams
Elixir of licorice, enough to make.....	8 ounces

Mix. Dose, 1 teaspoonful every 3 hours.

**Ague Pill.**

Quinine, 20 grains; Dover's powders, 20 grains; iron subcarbonate, 10 grains; mix with mucilage of gum arabic and form into 20 pills. Dose, 2 each hour, commencing 5 hours before the chill should set in. Then take 1 night and morning until all are taken.

**Fever Pills.**

Quinine sulphate.....	90 grains
Arsenous acid.....	1 grain
Strychnine sulphate.....	½ grain
Capsicum.....	15 grains

Make 30 pills. Dose: One or two pills 3 times a day.

**Fever Pills.**

Quinine muriate.....	90 grains
Extract of nux vomica...	7 grains
Podophyllin.....	4 grains
Ipecac.....	5 grains
Extract of gentian.....	30 grains

Mix and make 30 pills. One or two pills 3 times a day.

**Ague Specific.**

Quinine sulphate.....	1½ drams
Iron sulphate.....	1 dram
Oil of sassafras.....	30 drops
Oil of black pepper.....	30 drops
Arsenous acid.....	2 grains

Mix, and divide into 30 pills. One pill 3 times a day at meal time.

**Ague Capsules.**

Quinine sulphate.....	60 grains
Arsenous acid.....	1 grain
Reduced iron.....	30 grains
Capsicum.....	10 grains
Powd. extract of cascara sagrada.....	30 grains

Put into 30 capsules. Dose: One capsule 3 times a day.

**Fever and Ague Tonic.**

Powdered Peruvian bark..	4 ounces
Fowler's solution.....	½ fl. ounce
Orange peel, ground.....	1 ounce
Gentian root, ground.....	2 ounces
Rye whisky, enough to make.....	16 ounces

Macerate for 14 days, and filter through paper, adding enough whisky to make 1 pint. Dose, a teaspoonful every 2 or 3 hours when the fever is off.

**Ague Tonic.**

Powdered calisaya bark..	2 ounces
Iron and ammonium citrate.....	2 drams
Fowler's solution.....	¼ ounce
White wine, enough to make.....	2 pints

Macerate for 8 days and filter. Dose: A tablespoonful in water between meals.

**Chronic Chills.**

Cinchonidine sulphate.....	20 grains
Chinoidin .....	20 grains
Podophyllin .....	3 grains
Powdered ipecac .....	15 grains
Powdered capsicum .....	20 grains

Make into 16 pills.

One every 3 hours, with water slightly acidulated with hydrochloric acid.

**Chills.**

Quinine sulphate.....	30 grains
Cinchonidine .....	30 grains
Sulphuric acid.....	10 minims
Solution of arsenous acid.	1 dram
Fluidextract of nux vomica	10 minims
Water, enough to make...	4 ounces

Mix. Tablespoonful every hour when fever is off.

**Pills for Chills.**

Quinine sulphate.....	60 grains
Cinchonidine sulphate.....	60 grains
Extract of nux vomica....	8 grains
Ipecac .....	10 grains
Capsicum .....	10 grains
Podophyllin .....	5 grains
Leptandrin .....	5 grains

Mix and make 30 pills. One pill 3 times a day.

**Mixture for Chills.**

Quinine sulphate.....	1 dram
Cinchonidine sulphate....	1 dram
Tincture of nux vomica....	2 drams
Fowler's solution.....	2 drams
Syrup of yerba santa comp., enough to make...	4 ounces

Mix. One teaspoonful three times a day.

**Cholagogue Pills.**

Arsenous acid.....	1 grain
Corrosive sublimate.....	1 grain
Powdered ipecac.....	2 grains
Calomel .....	15 grains

Mix and make into 15 tablets. One every 3 or 4 hours until catharsis, or one every second or third night, as the exigency of the case may require.

**Tonic Cholagogue.**

Quinine sulphate.....	2 drams
Extract of leptandra.....	1 dram
Tincture of stillingia....	4 fl ounces
Tincture of podophyllum...	3 drams
Oil of sassafras .....	10 drops
Oil of wintergreen .....	10 drops
Molasses, to make.....	8 fl. ounces

Mix. Dose, a teaspoonful 3 times a day.

**Cholagogue.**

Cinchonidine sulphate....	2 drams
Fluidextract of podophyllum .....	1 ounce
Fluidextract of leptandra..	1 ounce
Fluidextract of stillingia..	1 ounce
Fluidextract of senna.....	1 ounce
Oil of sassafras .....	1 dram
Oil of anise .....	1 dram
Syrup, enough to make...	8 ounces

Mix. One teaspoonful 3 times a day.

**ITCH.****Itch Ointment.**

Sulphur .....	2 drams
Calomel .....	1 dram
Vaseline .....	2 ounces

Mix. Apply daily.

**Itch Liniment.**

Naphthol .....	½ ounce
Balsam peru.....	2 drams
Dissolve in	
Alcohol .....	4 ounces
Glycerin .....	4 ounces

Add

Oil of bergamot..... 1 dram

Mix. Apply to affected parts.

**Itch Liniment.**

Ichthyol .....	1 ounce
Balsam peru.....	½ ounce
Oil of lavender.....	1 dram
Alcohol .....	6 ounces
Glycerin .....	2 ounces

Mix and dissolve.

**Soap Ointment for Itch, Paul's.**

Castile soap.....	2 ounces
Petroleum .....	1 ounce
Alcohol .....	1 ounce
Wax .....	1 ounce

Mix, and make a soap ointment. To be applied once a day to the affected part. Three or four applications rarely fail to effect a cure.

**Soap Ointment for Itch.**

Soft soap.....	1 ounce
Oil of lavender .....	2 drams
Oil of turpentine .....	2 drams
Alcohol .....	1 ounce
Lanolin .....	2 ounces

Beat together in a mortar. Apply morning and night.

**Itch Ointment.**

Balsam of peru.....	1 ounce
Benzoic acid.....	110 grains
Oil of cloves.....	40 drops
Alcohol .....	2½ drams
Simple cerate.....	7 ounces

Dissolve the essential oil and the benzoic acid in the alcohol and mix with the cerate, then add the balsam of peru.

This is said to cure the itch in 24 hours.

**Soap Ointment for Itch.**

Brown soap.....	1 ounce
Common salt.....	½ ounce
Sulphur .....	½ ounce
Alcohol .....	1 fl. dram
Vinegar .....	2 fl. drams
Chlorinated lime.....	½ dram

Mix and rub well together; ¼ to be used night and morning as a friction. It is effectual, cheap, inoffensive.

**Itch Ointment.**

Sulphur .....	2 drams
Balsam peru.....	2 drams
Zinc ointment.....	2 ounces

Mix. Apply twice a day.

**Itch Ointment.**

Sulphur .....	1 dram
Salicylic acid.....	1 dram
Balsam peru.....	2 drams
Zinc ointment.....	2 ounces

Mix. Apply morning and night.

**Itch Salve.**

Carbolic acid.....	15 drops
Balsam peru.....	2 drams
Lanolin .....	½ ounce
Vaseline .....	1½ ounces

Mix. Use with massage.



**Itch Pomade.**

Ceolin ..... 5 parts  
Vaseline ..... 100 parts

Mix. Use with friction once every day over the parts affected.

**Itch Salve.**

Sulphur ..... 2 drams  
Carbolic acid..... 10 drops  
Resorcin ..... 1 dram  
Vaseline ..... 2 ounces

Mix. Use twice a day.

**Barber's Itch.**

Prepared chalk..... 2 drams  
Coal tar..... ½ dram  
Glycerin ..... 1 dram  
Simple cerate..... 10 drams

Mix. Apply with massage.

**Barber's Itch.**

Tannic acid..... 45 grains  
Lac sulphur..... 1½ drams  
Zinc oxide..... 4 drams  
Starch ..... 4 drams  
Vaseline ..... 1 ounce

Mix and make into an ointment and use twice daily.

**Barber's Itch.**

Prepared chalk..... 4 drams  
Coal tar..... 1 ounce  
Linseed oil..... 1 ounce

Mix. Cut the hairs short or shave them off, and apply once or twice a week.

**Barber's Itch.**

Sulphur ..... 1 dram  
Salicylic acid..... 1 dram  
Zinc oxide..... 2 drams  
Vaseline ..... 2 ounces

Mix. Use twice a day.

**RASHES, HIVES, ETC.****Nettle Rash (Hives).**

Boric acid..... 2 drams  
Ointment of rose water... ½ ounce  
Ointment of zinc oxide... ½ ounce

Mix. Apply to the irritated skin.

**Nettle Rash (Hives).**

Boric acid..... ½ ounce  
Rose water..... 8 ounces  
Camphor water..... 8 ounces

Mix and dissolve. Apply to the skin.

**Nettle Rash (Hives).**

Carbolic acid..... 5 grains  
Sulphur ..... ½ dram  
Camphor ..... 10 grains  
Ointment of zinc oxide... 1 ounce

Mix. Apply frequently to the irritated surface.

**Nettle Rash (Hives).**

Sulphur ..... 1 dram  
Camphor ..... 15 grains  
Resorcin ..... 15 grains  
Zinc ointment..... 2 ounces

Reduce to a fine powder and mix well. Apply to the skin.

**Nettle Rash (Hives).**

Carbolic acid..... 1 dram  
Water ..... 1 pint

Drop over the irritated skin.

**Nettle Rash (Hives).**

Cream of tartar..... 1 ounce  
Sulphur ..... ½ ounce  
Powdered sugar..... 3 ounces

Mix well. Give a teaspoonful twice a day for a child of 6 years. Younger children less in proportion.

**Nettle Rash (Hives).**

Cream tartar..... ½ ounce  
Boric acid..... 2 drams  
Rose water..... 10 ounces

Mix and dissolve. Apply freely to the skin.

**Nettle Rash (Hives).**

Cream tartar..... ½ ounce  
Resorcin ..... 1 dram  
Rose water..... 10 ounces

Mix. Apply to the skin.

**Poison Oak.**

Sodium hyposulphite..... 1 ounce  
Distilled water..... 8 ounces  
Carbolic acid..... 1 ounce  
Glycerin ..... ½ ounce

Mix. Shake well and use as a wash thrice daily.

**Poisoning From Ivy.**

Impure zinc carbonate... ½ ounce  
Lime water..... 2 ounces  
Glycerin ..... 2 ounces

Mix. Apply to the skin with a piece of soft, old muslin.

**Poisoning From Ivy.**

Lead carbonate..... 2 drams  
Powdered arrowroot ..... 2 drams  
Powdered gum acacia..... 1 dram  
Cocaine hydrochloride.... 10 grains  
Olive oil..... 3 ounces

Mix. Spread over the skin.

**Poisoning From Ivy.**

Sodium bicarbonate..... 4 ounces  
Boric acid, powdered.... 4 drams

Mix. Dust on the skin.

**Poisoning From Ivy.**

Sodium bicarbonate..... 1 ounce  
Boric acid..... 1 dram  
Rose water..... 1 pint

Mix and apply freely.

**Poisoning From Ivy.**

Sodium bicarbonate..... 1 ounce  
Ammonia water..... ½ ounce  
Rose water, enough to make ..... 1 pint

Mix. Apply freely to the irritated skin.

**Poisoning From Ivy.**

Sodium bicarbonate..... 4 ounces  
Resorcin, powdered..... 2 drams

Mix. Apply to the skin.

**Poisoning From Ivy.**

Sodium bicarbonate..... 1 ounce  
Resorcin ..... ½ dram  
Distilled water..... 1 pint

Mix and dissolve. Apply freely.

**Bites of Insects.**

Stronger ammonia water.. 1 ounce  
Cologne ..... 1 ounce

Mix. Apply a drop to the swelling by means of a pointed match or glass rod.

**Bites of Insects.**

Betanaphthol ..... 1 dram  
 Cologne ..... ½ pint  
 Mix. Apply to the irritated skin.

**Bites of Insects.**

Ammonium carbonate..... 1 ounce  
 Sodium bicarbonate..... ¼ ounce  
 Powder and mix. Rub on the sore.

**EAR REMEDIES.****Earache.**

Take equal parts of chloroform and laudanum, dip a piece of cotton into the mixture and introduce into the ear, and cover up and get to sleep as soon as possible.

**Earache.**

Tincture of opium..... ½ ounce  
 Olive oil..... ½ ounce  
 Mix. Apply as directed in the preceding formula.

**Earache.**

Chloroform,  
 Olive oil, equal parts.  
 Mix. Apply on cotton.

**Earache.**

Tincture of opium,  
 Chloroform,  
 Olive oil, equal parts.  
 Mix and shake well. Apply on cotton.

**Earache Drops.**

Camphor ..... 1 dram  
 Chloral ..... 1 dram  
 Glycerin ..... 2 ounces  
 Oil of almond..... 1 ounce  
 Mix. To be applied on cotton wool in the ear. May also be rubbed daily behind the ear.

**Earache Drops.**

Camphor ..... 1 dram  
 Chloroform ..... 1 ounce  
 Olive oil ..... 1 ounce  
 Mix and dissolve. Apply on cotton in the ear.

**Earache Drops.**

Camphor ..... 1 dram  
 Chloral ..... 1 dram  
 Chloroform ..... 1 ounce  
 Olive oil..... 1 ounce  
 Mix and dissolve. Apply on cotton in the ear.

**Earache Drops.**

Camphor ..... 1 dram  
 Chloral ..... 1 dram  
 Cocaine, alkaloid..... 10 grains  
 Chloroform ..... ½ ounce  
 Olive oil..... 1 ounce  
 Mix and dissolve. Apply on cotton in the ear.

**Softening Ear Wax.**

Eucalyptol ..... 10 drops  
 Olive oil..... 1 ounce  
 Mix. Apply as directed in the preceding formula.

**Otalgic Balsam (Ear Balsam).**

Pure carbolic acid..... 10 drops  
 Rectified oil of amber.... 5 drops  
 Oil of hyoscyamus..... 5 grams  
 Olive oil..... 30 grams  
 Mix. Three to four drops, once or twice daily in the ear.

**Softening Ear Wax.**

Borax ..... 10 grains  
 Glycerin ..... ½ dram  
 Water ..... 1 ounce

Mix and dissolve. Two or three drops warmed and gently dropped into the ear every day for two or three days, to be followed by syringing the ear.

**Wax in the Ear.**

Borax ..... 2 drams  
 Potassium chlorate..... 1 dram  
 Glycerin ..... ½ ounce  
 Alcohol ..... 2 drams  
 Rose water, enough to  
 make ..... 6 ounces

Mix. Apply with a sponge several times a day.

**Acoustic Oil.**

Oil of turpentine ..... 1 part  
 Oil of almond ..... 6 parts

**Mix.**

In atonic deafness, accompanied with induration of wax, 1 or 2 drops are poured into the ear, or on a piece of cotton wool, which is then gently placed in it.

**Taylor's Remedy for Deafness.**

Digest 2 ounces bruised garlic in 1 pound oil of almond for a week and strain. A drop poured into the ear is effective in temporary deafness.

**FEBRIFUGES****Febrifuge.**

Quinine sulphate..... 2 drams  
 Aromatic sulphuric acid.. 1 dram  
 Oil of peppermint..... 5 minims  
 Fluidextract of glycyrrhiza 1 ounce  
 Glycerin ..... 4 fl. ounces  
 Mix. A teaspoonful every 3 or 4 hours.

**Febrifuge Tea.**

Take Virginia snake-root and valerian root, of each 2 drams, and of boiling water 1 pint. Pour the boiling water on the roots and steep half an hour, and give a teaspoonful of the febrifuge and a teaspoonful of this tea together every 2 hours, and after the patient has been 24 hours without fever, give it every 3 or 4 hours, until the patient has good appetite and digestion; then 3 times daily, just before meals, until the patient has gained considerable strength, when it may be entirely discontinued; or he may continue the simple infusion to aid digestion.

**Febrifuge.**

Quinine sulphate..... 2 drams  
 Cinchonidine sulphate.... 1 dram  
 Diluted sulphuric acid.... 2 drams  
 Glycerin ..... 1 ounce  
 Peppermint water, enough  
 to make ..... 4 ounces  
 Mix and dissolve. A teaspoonful every 3 hours.

**Febrifuge.**

Quinine sulphate..... 1 dram  
 Fowler's solution..... 2 drams  
 Syrup of chocolate..... 4 ounces  
 Mix well. A teaspoonful every 3 hours.

**Febrifuge.**

Quinine, 25 grains; water, 1 pint; sulphuric acid, 15 drops; epsom salt, 2 ounces; mix and color with tincture of red saunders. Dose, a wineglassful 3 times per day.

**Febrifuge Wine.**

Quinine bisulphate.....	2 drams
Tincture of cardamom comp. ....	1 ounce
White wine, enough to make .....	1 pint

Mix and dissolve. A tablespoonful every 3 hours.

**Sage Tea.**

Dried leaves of sage.....	½ ounce
Boiling water.....	1 quart

Infuse for half an hour, and then strain. Sugar and lemon juice may be added in the proportion required by the patient. In the same manner may be made balm and other teas.

These infusions form very agreeable and useful drinks in fever, and their diaphoretic powers may be increased by the addition of spirit of nitrous ether, or antimonial wine.

**Compound Infusion of Sage.**

Sage .....	½ ounce
Boneset .....	½ ounce
Cascarilla .....	1 dram
Water .....	1½ pints

Mix and infuse till cold, and strain. Dose, a wineglassful every 3 or 4 hours. In hectic fever.

**Compound Sage Tea.**

Infusion of sage (sage tea) .....	1 pint
Sweet spirit of nitre.....	4 drams
Tincture of cascarilla....	4 drams

Mix. A tablespoonful every 3 hours.

**Fever Tea.**

Powdered cinchona bark..	1 ounce
Chamomile flowers.....	1 ounce
Sage leaves.....	1 ounce
Water, enough to make..	2 pints

Infuse for 3 days and filter, adding enough water to make 2 pints. A wineglassful every 4 hours.

**Hager's Fever Powders.**

Quinidine tannate.....	150 grains
Magnesium carbonate.....	15 grains
Oil of fennel.....	5 drops
Licorice root.....	30 grains
Sugar .....	650 grains

Mix. This powder is best given in milk, acidulous drinks being avoided. Up to the age of 2 years give as much as will lie on the point of a table knife every 2 or 3 hours; for older children, double the dose; when the fever subsides, give every 3 or 4 hours. Hager recommends this composition in preference to the well-known Hufeland's baby powder (rhubarb and magnesia) for teething troubles, feverishness, diarrhoea, catarrh, cough and restlessness.

**Fever Powder.**

Quinine tannate.....	100 grains
Rhubarb .....	50 grains
Magnesia, calcined.....	100 grains
Sugar .....	2 ounces

Mix. Give as directed in the preceding formula.

**Dover's Powder, Camphorated or Eclectic.**

Opium, powdered.....	30 grains
Ipecac. powdered.....	60 grains
Camphor, powdered.....	120 grains
Cream of tartar, powdered.....	480 grains

Mix thoroughly.

Every 23 grains contain 1 grain of opium. The average dose is about 10 grains.

**Diaphoretic Powder.**

Golden sulphide of antimony .....	5 parts
Camphor .....	5 parts
Purified sulphur.....	80 parts
White sugar.....	80 parts

Mix and wrap in paraffin paper.

**Diaphoretic Powder (Graefe's).**

Camphor .....	0.10 grams
Opium .....	0.03 grams
Potassium nitrate.....	0.30 grams
Sugar .....	10.00 grams

Mix.

**CHOLERA.****Cholera Drops.**

Aromatic tincture.....	4 ounces
Acetic ether.....	1 ounce
Oil of peppermint.....	1 dram

Mix. Ten to 20 drops on sugar every 2 hours.

**Cholera Drops.**

Aromatic sulphuric acid...	20 minims
Acetic ether.....	40 minims
Alcohol .....	1 fl. dram

Mix. In time of cholera, 2 to 4 drops to be taken on sugar at the least sign of illness.

**Cholera Drops.**

Aromatic tincture.....	2 ounces
Spirit of peppermint.....	1 ounce
Tincture of opium.....	1 ounce

Mix. Ten to 20 drops in a tablespoonful of hot water.

**Cholera Drops.**

Camphor .....	2 drams
Aromatic powder.....	2 drams
Ginger .....	4 drams
Opium .....	2 drams
Alcohol, enough to make..	8 ounces

Mix, macerate for 3 days and filter. A teaspoonful every 3 hours.

**Cholera Preventive.**

Dr. Honingsberger, of Calcutta, has employed with success a mixture consisting of 1 ounce tincture of quassia, ½ dram powdered cloves, 15 grains crystallized ferrous sulphate for vaccinating as a preventive of cholera. It is applied in the same manner as vaccine virus.

**Hypodermic Injection for Cholera.**

Chloral hydrate.....	3 drams
Morphine sulphate.....	4 grains
Cherry-laurel water.....	1 ounce

Mix. Use 15 to 20 drops.

**Hypodermic Injection for Cholera.**

Morphine sulphate.....	4 grains
Atropine sulphate.....	½ grain
Camphor water .....	1 ounce

Mix and dissolve. Use 15 to 20 drops.

**Cholera Drops (Schillbach's).**

Tincture of angelica .....	2 parts
Tincture of calamus .....	2 parts
Tincture of cloves .....	1 part
Tincture of cubeb.....	1 part
Tincture of cinnamon .....	1 part
Tincture of opium .....	2 parts
Tincture of saffron .....	2 parts
Proof spirit.....	11 parts

Mix. Dose, a teaspoonful every 3 hours.



**Cholera Drops, Russian.**

Tincture of opium.....	75 minims
Tincture of nux vomica....	15 minims
Tincture of valerian.....	2½ drams
Oil of peppermint.....	3 drops

Mix. Dose, 25 to 30 drops every hour or two, alone or in peppermint water.

**Cholera Drops.**

Tincture of ginger .....	1 ounce
Tincture of capsicum ....	1 dram
Tincture of opium .....	1 ounce
Spirit of camphor.....	½ ounce
Aromatic tincture.....	½ ounce

Mix. Dose, ½ teaspoonful every 3 hours.

**Cholera Drops.**

Opium .....	½ ounce
Rhubarb .....	1 ounce
Capsicum .....	¼ ounce
Camphor .....	1 ounce
Oil of peppermint.....	¼ ounce
Alcohol, enough to make..	1 pint

Mix, macerate for 3 days and filter. Dose, ½ to 1 teaspoonful every 3 hours.

**Anticholera Mixture.**

Opium .....	¼ pound
Catechu .....	1 pound
Camphor .....	7 ounces
Powdered rhubarb.....	¼ pound
Oil of anise .....	7 drams
Oil of cloves .....	4 drams
Alcohol .....	1 gallon
Water, boiling.....	½ gallon

Dissolve the opium in 1 pint of boiling water, and then dissolve the catechu in the remainder of the water. Set aside both solutions for 24 hours, then express and strain. In 4 ounces of the alcohol dissolve the oils. Place the rhubarb in a percolator and pour the remaining alcohol upon it. To this solution add the other three solutions. The mixture to be well shaken.

**Sun Cholera Drops.**

Spirit of camphor.....	1 ounce
Spirit of peppermint.....	1 ounce
Tincture of rhubarb .....	1 ounce
Tincture of capsicum .....	1 ounce
Tincture of opium .....	1 ounce

Mix. Dose, 10 to 20 drops every 2 hours.

**Stevens' Cholera Mixture.**

Cayenne pepper.....	2 drams
Common salt.....	1 dram
Boiling water.....	10 ounces
Infuse. When cold add:	
Vinegar .....	10 ounces

Mix. One tablespoonful every half hour.

**Stevens' Saline Powder.**

Potassium chlorate.....	7 grains
Sodium chloride.....	1 scruple
Sodium bicarbonate.....	½ dram

Mix. For a dose. Recommended in cholera.

**HOUSEHOLD PLASTERS.****Salicylic Acid Plaster.**

Soap plaster.....	85 parts
Yellow wax.....	5 parts
Salicylic acid.....	10 parts
Gently fuse the first two articles, and after removal from the heat add the salicylic acid.	

**Salicylic Acid Plaster.**

Soap plaster.....	8 ounces
Salicylic acid.....	1 ounce
Olive oil.....	1 ounce
Yellow wax.....	1 ounce

Rub the acid with the oil and add to the other ingredients that have previously been liquefied on a water bath. Mix well.

**Peruvian Plaster (Breast Plaster).**

Lead plaster, ammoniac and mercury plaster, soap plaster, of each 2 troy ounces; powdered camphor, 6 drams; balsam peru, 4 drams; mercurial ointment, 2 drams. Melt the plaster and mix in the other ingredients.

**Honey Plaster.**

Compound lead plaster....	20
Yellow wax.....	20

Liquefy on a water bath, and mix with it Purified honey..... 20

**Mustard Plaster.**

Warm water, sufficient.	
Flour of mustard.....	4 ounces
Rye meal.....	2 ounces

Make into a paste and spread upon muslin or cotton flannel with gauze between it and the skin.

**Mustard Plaster.**

Powdered mustard.....	2 ounces
Flaxseed meal.....	1 ounce
Wheat flour.....	1 ounce
Warm water, enough.	

Mix to the consistency of a paste, spread on muslin or linen and apply to part affected.

**Poor Man's Plaster.**

Beeswax .....	1 ounce
Tar .....	3 ounces
Rosin .....	3 ounces

Melt together and spread on paper or muslin.

**Poor Man's Plaster.**

Lead plaster.....	3 ounces
Yellow wax.....	2 ounces
Tar .....	3 ounces

Melt together and spread on muslin or soft leather.

**Rheumatic Plaster.**

One-quarter pound of rosin and ¼ pound of sulphur; melt them by a slow fire; then add 1 ounce of cayenne pepper, and ¼ of an ounce of camphor gum; stir well till mixed and temper with neatsfoot oil.

**Strengthening Plaster.**

Litharge plaster, 24 parts; white rosin, 6 parts; yellow wax and olive oil, of each 3 parts; and red oxide of iron, 8 parts. Let the oxide be rubbed with oil, and the other ingredients added melted, and mix the whole well together. This is an excellent plaster for relaxation of the muscles and weakness of the joints arising from sprains and bruises. The plaster, after being spread over leather, should be cut into strips two inches wide, and strapped firmly around the joint.

**MISCELLANEOUS FAMILY MEDICINES.****Cough Pill.**

Dover's powder,	
Benzoin, a sufficiency.	

Make into a mass and divide into 20 pills, of which one may be given several times a day. It is said to relieve cases of chronic bronchitis, with emphysema, or a persistent, tenacious cough. It will constipate the bowels, and this should be looked after when the remedy is used.

**Cough Pill.**

Dover's powder..... 40 grains  
 Squill, powdered..... 10 grains  
 Extract of cascara sagrada 20 grains  
 Make into 20 pills. Take one every 3 hours.

**Gravel Pills.**

Powdered squill..... 1 grain  
 Powdered soap..... 1½ grains  
 Oil of juniper..... ½ minim  
 Extract of henbane, a sufficiency to make a pill. One pill three times a day.

**Dr. Marshall Hall's Dinner Pills.**

Take of Barbadoes aloes, soap, powdered extract of licorice, equal parts; molasses a sufficient quantity.

Make a mass and form into pills of 4 grains each.

**Dinner Pills.**

Powdered aloes..... 2 grains  
 Extract of hyoscyamus.... ¼ grain  
 Powdered soap..... 1 grain  
 Make 1 pill. Take one after meals.

**Mandrake Pills.**

Leptandrin..... 1 dram  
 Podophyllin ..... 15 grains  
 Apocynin ..... ½ dram  
 Lobelia ..... 2 grains

Mass with sufficient white castile soap moistened with strong essence of peppermint and make into 3-grain pills.

Dose, 1 or 2 pills at bedtime.

**Compound Mandrake Pills.**

Podophyllin ..... ¼ grain  
 Leptandrin ..... ½ grain  
 Iridin ..... ½ grain  
 Ipecac ..... ⅛ grain  
 Extract of hyoscyamus... ⅛ grain

Mix and make 1 pill. Take one or two at bedtime.

**Composition Powder.**

Bayberry ..... 12 ounces  
 Turmeric ..... 4 ounces  
 Cloves ..... 5 ounces  
 Ginger ..... 7½ ounces  
 Cayenne ..... 1½ ounces

All finely powdered and mixed. The dose of the preparation is a teaspoonful in a cup of sweetened hot water.

**Composition Powder.**

Bayberry ..... 4 ounces  
 Pinus canadensis..... 2 ounces  
 Ginger ..... 2 ounces  
 Cayenne ..... ¼ ounce  
 Cloves ..... ¼ ounce

Mix and take as directed in the preceding

**Composition Powder.**

Hemlock bark..... 2 pounds  
 Bayberry bark..... 1 pound  
 Ginger ..... ½ ounce  
 Capsicum ..... 1 ounce  
 Cloves ..... 1 ounce

Mix. This formula is not so strong as the preceding. The hemlock bark is considered an addition to its diaphoretic properties.

**Composition Powder.**

Bayberry ..... 4 ounces  
 Pinus canadensis..... 4 ounces  
 Ginger ..... 4 ounces  
 Golden seal..... 2 ounces  
 Sassafras ..... 2 ounces  
 Cayenne ..... ½ ounce  
 Cloves ..... ½ ounce

Mix.

**Composition Powder.**

Bayberry bark..... 1 pound  
 Ginger ..... 1 ounce  
 Cloves ..... 1 ounce  
 Capsicum ..... 1 ounce

Mix. Use as in the preceding.

**Composition Powder.**

Ginger ..... 1 pound  
 Sassafras ..... 1 pound  
 Sarsaparilla ..... 1 pound  
 Licorice ..... 2 pounds  
 Cloves ..... ½ pound

Mix.

**Composition Essence.**

Bayberry bark, in powder. 4 ounces  
 Capsicum, in powder..... ¼ ounce  
 Hemlock spruce bark, in powder ..... 4 ounces  
 Pimenta, in powder..... ¼ ounce  
 Glycerin ..... 2 fl. ounces  
 Alcohol, 60 per cent.,  
 Distilled water, a sufficient quantity of each to produce ..... 30 fl. ounces

Mix.

**Diachylon Wound Powder.**

Five grams lead plaster and 2 grams yellow wax, with 20 grams ether, are agitated in a flask until solution or perfect disintegration of the lead plaster results. Forty-five grams wheat starch, 45 grams talcum and 3 grams boric acid, all in very fine powder, are mixed in a mortar, then the ethereal solution added, perfumed with one drop each of the oils of wintergreen and bergamot, and exposed on parchment paper at ordinary temperature until the volatilization of the ether. This powder is valuable as a dusting powder in chafing, sore feet, etc.

**Charcoal Poultice, Thompsonian.**

Charcoal ..... 3 parts  
 Ginger ..... 1 part  
 Bayberry ..... 1 part  
 Slippery elm..... 2 parts  
 Hot water, sufficient.

Mix to make a paste.

**Charcoal Poultice.**

Wood charcoal, in powder ½ ounce  
 Crumbs of bread..... 2 ounces  
 Cake meal..... 1½ ounces  
 Boiling water..... 10 fl. ounces

Macerate the bread in the water near the fire; mix; stir in the meal and half the charcoal, and sprinkle the remainder of the charcoal on the surface of the poultice.

**Antiseptic Poultice.**

Flaxseed meal..... 1 pound  
 Boric acid..... 2 ounces  
 Boiling water, enough.

Mix the flaxseed meal and the boric acid and make a poultice with hot water.

**Antiseptic Poultice.**

Flaxseed meal..... 1 pound  
 Thymol ..... 1 dram  
 Eucalyptol ..... 1 dram  
 Salol ..... 2 drams  
 Boiling water, enough.

Rub the thymol, eucalyptol and salol until liquid, mix with the flaxseed meal and make a poultice with hot water.

**Anodyne Poultice.**

Flaxseed meal..... 1 pound  
 Tincture of opium..... 2 ounces  
 Boiling water, enough

Mix.

**Anodyne Poultice.**

Flaxseed meal..... 1 pound  
Powdered opium..... ¼ ounce  
Boiling water, enough

Mix.

**Solution for Fetid Breath.**

Chlorinated lime..... 3 drams  
Distilled water..... 2 drams  
Alcohol ..... 2 drams  
Oil of rose..... 4 minims

Mix. A teaspoonful in a glass of water as a lotion for the mouth.

**Solution for Fetid Breath.**

Salicylic acid..... 1 dram  
Solution acetate of ammonium ..... 3 ounces  
Glycerin ..... 1 ounce  
Water, enough to make... 6 ounces

Mix. A tablespoonful every six hours.

**Solution for Fetid Breath.**

Salicylic acid..... ¼ ounce  
Thymol ..... 10 grains  
Eucalyptol ..... 10 grains  
Boric acid..... ½ ounce  
Glycerin ..... 3 ounces  
Hydrogen peroxide solution 1 ounce  
Rose water, to make..... 1 pint

Dissolve the first four ingredients in the glycerin, add the other ingredients and filter through talc powder. Use freely as a mouth wash.

**Sweating of the Feet.**

Potassium permanganate.. 13 parts  
Alum ..... 1 part  
Talc ..... 50 parts  
Zinc oxide..... 58 parts  
Calcium hydrate..... 18 parts

Mix.

**Sweating of the Feet.**

Salicylic acid..... 2 parts  
Zinc stearate..... 1 part  
Talc ..... 40 parts  
Compound tincture of vanillin, to perfume.

Mix.

**Lotion for Fetid Perspiration of the Feet.**

Potassium permanganate.. 30 grains  
Water ..... 4 ounces

Dissolve. The lotion to be applied morning and evening, and the feet to be afterwards powdered with lycopodium or starch.

**Solution of Coal Tar.**

Quillaja bark in No. 20 powder ..... 2 ounces  
Rectified spirit, a sufficient quantity.

Moisten the powder with a sufficient quantity of the menstruum and macerate for twenty-four hours in a closed vessel. Then pack in a percolator, and gradually pour rectified spirit upon it until 1 pint of percolate is obtained. To this add:

Prepared coal tar..... 4 ounces

Digest at a temperature of 120° F. for two days and allow to become cold, and decant or filter.

**Soothing Syrup.**

Ammonium bromide..... ½ ounce  
Tincture of hyoscyamus... 1 ounce  
Oil of anise ..... 10 drops  
Oil of fennel ..... 10 drops  
Oil of bitter almond ..... 2 drops  
Syrup of tolu, enough to make ..... 1 pint

Mix and dissolve. Dose, a teaspoonful every 3 hours.

**Soothing Syrup.**

Camphor, monobromated... 16 grains  
Tincture of henbane..... 4 drams  
Syrup of lettuce, enough to make ..... 8 ounces

Mix. Dose, a teaspoonful every hour until relief is obtained.

**Soothing Syrup Without Opium.**

Oil of anise..... 25 minims  
Alcohol ..... 2 ounces  
Fluidextract of valerian... 1 ounce  
Oil of peppermint..... 15 minims  
Tincture of camphor..... 2 drams  
Fluidextract of licorice... 1 ounce

Mix. Shake the bottle. Dose, ¼ to ½ teaspoonful in water; repeat as needed.

**Soothing Syrup Without Opium.**

Ammonium bromide..... 960 grains  
Chloroform ..... 2 drams  
Fluidextract of conium... 2 drams  
Tincture of hyoscyamus... 4 drams  
Dextrin syrup..... 8 ounces  
Water, enough to make... 16 ounces

Mix.

**Liquid Headache Cure.**

Caffeine ..... 20 grains  
Ammonium carbonate..... 20 grains  
Elixir of guarana..... 1 ounce

Mix. Dose, 1 teaspoonful every hour until relieved.

**Ammonia in the Bath.**

Nothing so quickly restores tone to exhausted nerves and strength to a weary body as a bath containing an ounce of ammonia to each pail of water. It makes the flesh firm and smooth as marble, and renders the body pure and free from odor.

**Bath Powder.**

Powdered borax..... 1 pound  
Extract of violet..... 2 drams  
Extract of heliotrope..... 2 drams

Mix the extracts with the borax intimately. Put up in wax papers holding 1 ounce each. One powder to a bath.

**Artificial Sulphur Baths.**

Sulphur baths are ordinarily made by simply dissolving potassium sulphuret in water, in the proportion of from ½ an ounce to 2 ounces for every 40 gallons of water. But, in order to obtain a bath more closely resembling some of the more noted natural sulphurous springs which have proven so effectual in the treatment of rheumatism and skin diseases of certain types, proceed as follows.

Potassium (or sodium) sulphide ..... 15 grains  
Sodium bicarbonate..... 20 grains  
Sodium chloride..... 4 grains  
Castile soap shavings... 2 grains  
Alum ..... 2 grains  
Calcium carbonate..... 2 grains  
Water ..... 1 gallon

Boil these materials in a sufficient quantity of water to dissolve them, and stir solution with a wooden or glass rod until an odor of sulphuretted hydrogen becomes manifest. The solution is then poured into the patient's ordinary water bath, previously heated to about 96° F.

**Beef Tea.**

Take a thin, rump-steak of beef lay it on a board and with a case-knife scrape it. Mix the red pulp obtained with 3 to 4 times its bulk of water, stirring until completely diffused; bring to slow boil on moderate fire; season to taste, and use without straining, giving 1 to 3 fluid ounces at a time.



**Ingrowing Toenail.**

Hydrochloric acid.....	1 dram
Nitric acid.....	1 dram
Zinc chloride.....	1 ounce

Mix. Apply 1 drop to the affected part once a day. This gives instant relief to the pain caused by ingrowing toenail.

**Water Brash.**

Powdered sodium phosphate	10 parts
Calcined magnesia.....	3 parts
Powdered vanilla.....	1 part

Mix. A teaspoonful in a wineglass of water.

**Water Brash (Acid Stomach).**

Calcined magnesia.....	1 ounce
Sodium bicarbonate.....	1 ounce
Aromatic powder.....	1 dram

Mix. A teaspoonful in a wineglass of water.

**Gall Stones.**

Glycerin is said to be an excellent substitute for olive oil in the treatment of gall stones, a 10-gram dose in potash water generally relieving pain, while a 25-gram dose in most cases removes it.

**Mumps.**

Magnesium sulphate.....	4 drams
Water .....	4 ounces
Sodium emetic.....	1 grain
Spirit of nitrous ether....	3 drams
White sugar.....	6 drams

Mix. A teaspoonful every 3 hours, after the bowels have been well moved. Use flaxseed poultices locally.

**To Prevent Sore Nipples.**

Apply a mixture of tannin and glycerin, 2 drams to the ounce, daily during the last month of pregnancy. This renders the nipples tough, but elastic.

**Sea-Sickness.**

Atropine sulphate.....	½ grain
Strychnine sulphate.....	½ grain
Peppermint water.....	10 fl. drams

Mix. To be used hypodermically.

**Sea-Sickness.**

Caffeine citrate.....	64 grains
Sodium salicylate.....	48 grains
Distilled water.....	160 minims

Mix and dissolve with the aid of a gentle heat.

To be used hypodermically.

In the majority of cases the administration of one gram of either of the foregoing solutions allays vomiting, dispels nausea, headache and dizziness, and causes quiet sleep in from one-half to three-quarters of an hour.

**Sea-Sickness.**

Atropine sulphate.....	½ grain
Strychnine sulphate.....	½ grain

Make 100 pills. Take one or two every 3 hours.

Pills prepared with the two alkaloids of this formula and taken at the first approach of the symptoms of the disease, prevent its development.

**Sea-Sickness.**

Chloral .....	3 grams
Distilled water.....	50 grams
Gooseberry syrup.....	60 grams
French essence of pepper- mint .....	2 drops

Mix. One-half at a draught. The preventive is the chloral.

**Sea-Sickness.**

Stovain .....	1 grain
Pyramidon .....	3 grains
Veronal .....	45 grains

Mix and divide into 6 powders. One powder every 2 hours.

**Sea-Sickness.**

Sodium bicarbonate.....	½ dram
Diluted hydrocyanic acid..	12 drops
Tincture of strophanthus..	12 drops
Water, enough to make...	1½ ounces

Mix and dissolve. A teaspoonful with a tablespoonful of carbonated water every four hours.

**Cancer Powder, Esmarch's Painless.**

Arsenous acid.....	10 grains
Morphine hydrochloride...	10 grains
Calomel .....	80 grains
Acacia .....	480 grains

Mix well and use as a dusting powder.\*

**Staphisagria Lotion.**

Stavesacre seeds (in rough powder) .....	2 ounces
Acetic acid.....	1 ounce
Water, a sufficiency.	
Alcohol .....	2 ounces
Glycerin .....	1 ounce

Mix the acetic acid with 10 ounces of water, add the stavesacre, boil for 10 minutes in a covered vessel, add the alcohol, stand till cold, strain or filter, add the glycerin, and make finished product measure 1 pint.

**Cod Liver Oil Jelly.**

Five fluid ounces of cod liver oil, 2 drams of the best isinglass, and 1 fluid ounce of water are placed in a suitable vessel over a water bath, and sufficient heat is applied to melt the isinglass; ½ ounces of white powdered sugar, with which 4 drops each of oil of bitter almond and oil of allspice, and 2 drops of oil of cinnamon (Ceylon) have been incorporated are now added, the vessel is removed from the fire and the mixture is stirred until it thickens. A firm jelly results, which keeps well in corked bottles.

**Creosote Mixture.**

Creosote (beechwood)....	3 drams
Tincture of gentian com- pound .....	1 ounce
Alcohol .....	8 ounces
Sherry wine, enough to make .....	2 pints

Mix. Dose, a tablespoonful in a wineglass of water 3 times a day.

**Creosote Mixture.**

Creosote .....	3 drams
Olive oil.....	1 ounce
Gum acacia.....	3 drams
Syrup of tolu.....	10 ounces
Peppermint water, enough to make.....	2 pints

Mix the creosote and olive oil and acacia and emulsify with 4 ounces of the peppermint water. Then add the other ingredients.

**Phosphorated Oil Emulsion.**

Phosphorated oil.....	1 dram
Yolk of egg.....	2 drams
Solution of potassa.....	1 dram
Syrup of tolu.....	6 drams
Chloroform water, enough to make.....	6 ounces

Mix together the first two ingredients, then add the syrup and water, and lastly the solution of potash.

**Creosote and Cod Liver Oil.**

Creosote .....	½ dram
Cod liver oil.....	6 ounces
Saccharin .....	1 grain

Mix. Take a teaspoonful to a tablespoonful, once, twice or thrice daily.

**Petroleum Emulsion.**

Liquid petrolatum.....	16 ounces
Powdered acacia.....	8 ounces
Glycerin .....	4 ounces
Calcium hypophosphite.....	288 grains
Sodium hypophosphite.....	288 grains
Water, enough to make...	3 pints

Add the acacia to the oil, and mix thoroughly in a large mortar; then add 1 pint water (all at once) and rub briskly until the emulsion is formed. Dissolve the hypophosphites in a half pint of water, to which add the glycerin; then add all to the emulsion and rub well together, adding any water necessary to make up the measure of 3 pints of finished product.

**Petroleum Emulsion.**

Liquid petrolatum.....	4 ounces
Oil of sweet almond.....	2 ounces
Powdered acacia.....	1½ ounces
Glycerin .....	1½ ounces
Sodium hypophosphite.....	128 grains
Calcium hypophosphite.....	128 grains
Lime water, enough to make .....	1 pint

Mix as directed in the preceding.

**Emulsion of Fats.**

(Emulsion of beef fat, cocoanut oil, peanut oil and olive oil.)

Beef fat, recently rendered	100 grams
Cocoanut oil.....	100 grams
Peanut oil.....	100 grams
Olive oil.....	100 grams

Melt the beef fat, add the oils and when cool and just about setting, add the mixture in several portions to

Tincture of quillaja..... 50 c.c.  
contained in a half gallon dry bottle, shaking vigorously after each addition. In like manner add:

Peppermint water.....	500 c.c.
Syrup, enough to make...	1000 c.c.

**Emulsion of Fats.**

Tallow, freshly prepared..	2½ troy ounces
Cocoanut oil.....	2½ troy ounces
Peanut oil.....	2½ troy ounces
Olive oil.....	2½ troy ounces

Melt in a hot mortar and add:

Powdered acacia.....	10 troy ounces
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Mix well and add:

Hot water.....	15 fl. ounces
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Stir briskly and when cool make up with warm water to 32 fl. ounces.

The first formula produces an emulsion containing about 40 per cent. of mixed fats, and the second about 31 per cent.

**Emulsion of Balsam of Tolu.**

Balsam of tolu.....	5 drams
Alcohol .....	10 drams
Gum acacia.....	10 drams
Orange flower water.....	10 drams
Syrup of tolu.....	4 ounces
Water .....	12 ounces

Dissolve the balsam of tolu in the alcohol, filter, and allow to stand until a thick mass results. Add the acacia and mix well, then add the orange flower water and stir till emulsified, then add the syrup and water. Mix well.

**Dr. Breen's Nerve Tonic.**

Coca, No. 20 powder.....	8 ounces
Damiana .....	8 ounces
Gentian .....	8 ounces
Potassium bromide.....	1¼ ounces
Sodium salicylate.....	1 ounce
Dandelion root.....	8 ounces
Alcohol .....	1 quart
Glycerin .....	1 pint
Water, sufficient quantity.	1 gallon

Percolate the drugs with a mixture of the alcohol and 2 pints of water. Dissolve the salts in the 2 pints of water. Mix, add the glycerin and enough water to make 1 gallon. Dose, a wineglassful.

**Cure for Red Nose.**

Zinc ointment.....	4 drams
Rice flour.....	1 dram
Sulphur .....	12 grains
Otto of rose.....	1 drop

Mix.

**Cure for Red Nose.**

Ichthyol .....	1 dram
Sulphur .....	4 drams
Starch .....	4 drams
Vaseline, enough to make	2 ounces

Apply freely.

**Powder for Cleaning Artificial Teeth.**

Prepared chalk.....	3½ pounds
Powdered soap.....	½ ounce
Powdered borax.....	½ ounce
Oil of wintergreen.....	10 minims

Mix.

**Powder for Cleaning Artificial Teeth.**

Powdered cuttlefish bone..	2 ounces
Precipitated chalk.....	2 ounces
Sodium bicarbonate.....	1 ounce
Oil of lavender.....	10 minims

Mix.

**Powder for Cleaning Artificial Teeth.**

Prepared chalk.....	3½ pounds
Light magnesium carbonate	½ pound
Powdered cuttlefish bone..	½ pound
Powdered pumice stone...	¼ pound
Oil of peppermint.....	5 minims

Mix.

**Lecithin Pills, B.P.C.**

Lecithin .....	18 grains
Strychnine hydrochloride..	1-5 grain
Althaea, in powder.....	12 grains
Licorice, in powder.....	12 grains
Gum acacia, in powder....	6 grains
Alcohol, a sufficient quantity.	
Glycerin, a sufficient quantity.	

Mix and make into 12 pills. Dose, 1 to 4 pills.

**Curry Powder.**

Caraway fruit.....	½ ounce
Coriander fruit.....	2 ounces
Cumin fruit.....	1 ounce
Cardamom seed.....	1 ounce
Powdered ginger.....	1 ounce
Black pepper.....	1 ounce
Turmeric, in powder.....	4 ounces

Mix.

**Curry Powder.**

Coriander .....	5 pounds
Turmeric .....	1½ pounds
Fenugreek .....	12 ounces
Black pepper.....	8 ounces
Cumin .....	8 ounces
Mustard .....	8 ounces
Dill .....	4 ounces
Pimenta .....	4 ounces
African ginger.....	4 ounces
Table salt.....	1½ ounces
Capsicum .....	¼ ounces

Mix and grind the ingredients together to a fine powder.

**Curry Powder.**

Coriander seeds.....	1 ounce
Cayenne .....	1 ounce
Cumin seeds.....	2 ounces
Mustard .....	3 ounces
Ginger .....	3 ounces
White pepper.....	6 ounces
Turmeric .....	1 pound

All the ingredients should be freshly powdered, and, after being mixed, passed through a fine sieve.

**Acetone Collodion.**

Pyroxylin .....	5 grams
Camphor .....	1 gram
Acetone, enough to make..	100 c.c.

Dissolve the pyroxylin and camphor in a clean bottle with 90 c.c. of acetone and, after solution has been effected, add sufficient of the acetone to make the product measure 100 c.c.. If the pyroxylin is of a good quality solution will be prompt and perfect, otherwise it will be necessary to permit the liquid to stand until it has become clear and then decant.

**Alcohol Pencils.**

Sodium stearate.....	6 grams
Glycerin .....	2.5 grams
Absolute alcohol, to make..	100 grams

The pencils may be preserved in tin-foil tubes. They are used for disinfecting the epidermis in parasitic skin diseases. When rubbed on the skin, the alcohol evaporates and leaves a coating of thin soap-varnish on the skin.

**Perfume Spray for Ball Room.**

Terebene .....	4 fl. drams
Oil of lavender.....	4 fl. ounces
Terpineol .....	2 fl. ounces
Oil of lignaloe.....	1 fl. ounce

Mix. Spray over the room with an atomizer, as high as possible in the air, before any lights are lit.

**Manicure Powder.**

Putty powder.....	8 ounces
Carminc .....	20 grains
Otto of rose.....	6 minims
Otto of neroli.....	5 minims

Mix and triturate well together.





# PART FIVE.

## Household Formulas, Domestic Receipts, Etc.

### CLEANING PREPARATIONS.

#### Chemical Eresine.

Soft soap.....	3 ounces
Potassium carbonate.....	6 drams
Ammonia water.....	6 ounces
Soft water, to make.....	96 fl. ounces

Dissolve the soap in the water by the aid of heat, strain and add the potassium carbonate and the ammonia water.

#### Cleansing Fluid.

Ammonia water.....	2 ounces
Castile soap.....	$\frac{1}{2}$ ounce
Potassium nitrate.....	$\frac{1}{2}$ ounce
Rain water.....	$1\frac{1}{2}$ pints

Prepare as directed in the preceding.

#### Cleansing Fluid.

Soft soap.....	1 ounce
Benzine.....	2 ounces
Potassium carbonate.....	$\frac{1}{2}$ ounce
Ammonia water.....	2 ounces
Water, enough to make...	2 pints

Dissolve the soft soap in 4 ounces of water, add the benzine and mix well by stirring, then add the other ingredients.

#### Cleaning Fluid.

Soft soap.....	$\frac{1}{4}$ pound
Sodium carbonate.....	$\frac{1}{4}$ pound
Ammonia water.....	8 ounces
Water, enough to make...	1 gallon

Prepare as directed in the formula for "Chemical Eresine."

#### Cleaning Compound.

Glycerin.....	$\frac{1}{2}$ ounce
Alcohol.....	$\frac{1}{2}$ ounce
Sulphuric ether.....	$\frac{1}{2}$ ounce
Ammonia water.....	2 ounces
Castile soap, powdered...	$\frac{1}{2}$ ounce
Rain water, enough to make.....	2 pints

Mix and use with brush or sponge and rinse with pure water.

#### Cleaning Compound.

Soft soap.....	2 ounces
Alcohol.....	4 ounces
Ether.....	2 ounces
Ammonia water.....	8 ounces
Soft water, enough to make.....	1 gallon

Dissolve the soap in the alcohol, add the ether, stirring well, then add 6 pints of water in portions, shaking after each addition. Finally add the ammonia water and enough water to make a gallon.

#### Electric Cleaning Compound.

Castile soap (white).....	1 fl. ounce
Ether.....	1 fl. ounce
Glycerin.....	1 fl. ounce
Stronger ammonia water..	2 fl. drams
Water, enough to make...	32 fl. ounces

To 16 fluid ounces of water add in the following order the glycerin, ammonia water and ether. Shake well and add enough water to measure 32 fluid ounces. Then add the soap (in fine shavings). Shake often for a few hours.

Directions: Place the article to be cleaned on a table or any flat surface, with a fold or two of cloth under the spot, wet a sponge with the fluid and rub hard for a few seconds; then wash with clean water.

#### Cleaning Compound.

Castile soap, powdered...	4 ounces
Ether.....	4 ounces
Alcohol.....	8 ounces
Stronger ammonia water..	8 ounces
Chloroform.....	2 ounces
Soft water, enough to make.....	1 gallon

Dissolve the soap in 8 ounces of water, add the alcohol, then the ether and chloroform, mix well. Finally add the ammonia water and enough water, to make 1 gallon.

#### Eureka Renovator.

Castile soap (white).....	2 ounces
Ammonia water.....	8 ounces
Sulphuric ether.....	2 ounces
Alcohol.....	2 ounces
Glycerin.....	2 ounces
Oil of gaultheria.....	2 drams
Water (soft), enough to make.....	1 gallon

Dissolve the soap (by heat) in the water; also the oil of gaultheria in the alcohol; then add the other ingredients in their proper order.

#### Stain Eradicator.

Soft soap.....	4 ounces
Sodium carbonate.....	3 ounces
Alcohol.....	8 ounces
Stronger ammonia water..	4 ounces
Ether.....	8 ounces
Water, enough to make...	1 gallon

Dissolve the soap in 1 pint of water, the ether in the alcohol and the sodium carbonate in 8 ounces of water. Mix the solutions, shake well, add the ammonia water and enough water to make 1 gallon.

#### Washing Fluid.

Soap.....	2 ounces
Boiling soft water.....	1 gallon
Stronger ammonia water..	4 ounces
Mix. For a cheap washing fluid, and one easily made, this formula is one of the best.	

#### Excelsior Cleaning Fluid.

Benzine, deodorized.....	1 quart
Alcohol.....	1 ounce
Bay rum.....	$\frac{1}{2}$ ounce
Oil of wintergreen.....	$\frac{1}{2}$ ounce
Ammonia water.....	$\frac{1}{2}$ ounce
Chloroform.....	$\frac{1}{2}$ ounce
Sulphuric ether.....	$\frac{1}{2}$ ounce
Borax.....	$\frac{1}{2}$ dram

Mix and dissolve. Shake before using.

## REMOVAL OF STAINS AND GREASE SPOTS.

The following table gives, at a glance, the best means of cleansing all kinds of fabrics from any stain whatever. With this table, a few simple chemicals and a good deal of care and perseverance, anyone may set up a chemical cleansing establishment. Great pains must be taken when ether and benzine are employed to avoid their taking fire, their vapors, when mixed with air, being highly explosive.

KIND OF STAIN.	FROM LINEN.	FROM COLORED GOODS.		FROM SILKS.
		COTTON.	WOOLEN.	
Sugar, glue, blood and albumen.		Simple washing with water and soap.		
Grease.	Soapsuds, alkaline lyes.	Lukewarm soapsuds.	Soapsuds, ammonia.	Benzine, ether, ammonia, potash, magnesia, chalk, yolk of egg.
Varnish and oil paints.		Turpentine or benzine and soap, chloroform.		
Stearine.		Very strong alcohol, 95 degrees.		
Vegetable colors, red wine, fruit, red ink.	Sulphur vapors; warm chlorine water; soap afterwards.	Wash out with warm soapsuds or ammonia water.		
Alizarine ink.	Tartaric acid; the older the stain the stronger the solution.	Dilute tartaric acid, if the stuff will bear it.		
Iron rust, and ink made of galls.	Warm oxalic acid solution; dilute hydrochloric acid; then soap and water.	Repeated washings with a solution of citric acid, if the colors will bear it.	The same; dilute hydrochloric acid, if the wool is dyed naturally; diluted oxalic acid solution.	Nothing can be done, and all attempts only make it worse.
Lime, lye or alkalis.	Simply wash with water.	Drop very dilute nitric acid upon it. The stain previously moistened, can be rubbed off with the finger.		
Tannin, green nut shells.	Javelle water; warm chlorine water; concentrated solution of tartaric acid.	Alternate washing with water and with more or less dilute chlorine water, according to the colors.		
Coal-tar, wagon grease.	Soap, oil of turpentine, alternating with a stream of water; chloroform.	Rub with lard, then soap it well. After a time wash alternately with water and turpentine, and chloroform.		
Acids.		Red acid stains are destroyed by ammonia, followed by thorough washing with water. acid are permanent. Brown stains of nitric		
		The same; but use benzine instead of turpentine, and the water must fall on from some height.		

**Grease Eradicator.**

Castile soap shavings....	2 ounces
Sodium carbonate.....	2 ounces
Borax .....	1 ounce
Ammonia water.....	7 fl. ounces
Alcohol .....	3 fl. ounces
Oil of turpentine.....	2 fl. ounces
Ether .....	2 fl. ounces
Water, enough to make...	64 fl. ounces

Dissolve the soap in the water by means of heat, then add the other ingredients. In the first place, the oil of turpentine must be in form of an emulsion in order to remain suspended in this mixture, for it will not dissolve in it. This object may be accomplished by shaking the oil with a strong solution of the castile soap. This failing, use soft soap, 40 parts of a 1:10 solution to every 50 parts of oil of turpentine. The ether, in order to mix, must first be dissolved in the alcohol, the amount of which may possibly have to be augmented to 4 fluid ounces. Now dissolve the sodium carbonate and borax in part of the water, add the ammonia, then the turpentine emulsion, incorporate the spirit of ether, and finally make up the measure with water.

**Grease Eradicator.**

Equal parts of ether, alcohol and ammonia water. Use as follows: Place under the fabric to be cleaned a piece of blotting paper, moisten the sponge first with water, then with the grease eradicator, and rub and pat, when the grease will be immediately absorbed, partially saponified and absorbed by the blotting paper.

**Grease Eradicator.**

Benzine .....	1 pint
Ether .....	2 ounces
Alcohol .....	8 ounces
Chloroform .....	2 ounces

Mix. Use as directed in the preceding. Keep away from flame.

**Washing Fluid.**

Soft soap.....	8 ounces
Stronger ammonia water..	8 ounces
Sodium carbonate.....	8 ounces
Soft water, enough to make .....	1 gallon

Dissolve the soap in 2 pints of water, and the sodium carbonate in 2 pints of water and mix the solutions. Then add the ammonia water and enough water to make 1 gallon.

If this preparation is to be sold in bottles (1 pint or ½ pint), it is advisable to filter it before bottling, using a covered funnel.

**Lightning Cleaner.**

Castile soap.....	4 ounces
Powdered sodium carbonate .....	2 ounces
Powdered borax.....	1 ounce
Ammonia water.....	7 ounces
Alcohol .....	3 ounces
Oil of turpentine.....	2 ounces
Ether .....	3 ounces

Mix and dissolve.

**Washing Liquid.**

Soft soap .....	4 ounces
Sodium carbonate.....	8 ounces
Stronger ammonia water..	4 ounces
Benzine .....	4 ounces
Water, enough to make...	1 gallon

Dissolve the soap in 1 pint of water and stir in the benzine. Dissolve the sodium carbonate in 1 pint of water and add the ammonia water. Mix the two solutions and add enough water to make 1 gallon.

**Quick Cleanser.**

Ether .....	1 ounce
Chloroform .....	1 ounce
Ammonia water.....	4 ounces
Alcohol .....	10 ounces

Mix. Shake before using. Apply as directed for "Grease Eradicator."

**Washing Liquor.**

Slice 1 pound white soap, stir it into 6 gallons of boiling water till dissolved, then add 2 ounces of pearlash, cool to a milk-warm temperature, and add 1 pound stronger ammonia water.

**Benzine Jelly.**

Cocoa soap.....	2 drams
Ammonia water.....	3 drams
Solution of potassa.....	1½ drams
Water, enough to make...	2 ounces

Dissolve the soap, with the aid of heat, in 1 ounce of water, add the ammonia water, and potassa solution, and sufficient water to make 2 ounces. To this saponaceous cream carefully add, in small portions at a time, 1 gallon of benzine.

**Benzine Jelly.**

Soft soap.....	2 ounces
Ammonia water.....	2 ounces
Sodium carbonate.....	4 ounces
Water .....	8 ounces
Benzine .....	4 pints

Dissolve the soap and sodium carbonate in the water and add the ammonia water. Shake well, then add the benzine gradually, stirring constantly.

**Benzine Cream.**

Infusion soap bark (20 per cent).....	4 fl. drams
Benzine .....	2 fl. ounces

Proceed as above.

**Benzine Jelly.**

Castile soap.....	4 ounces
Stronger ammonia water..	1 ounce
Benzine .....	1 pint
Water, enough to make...	2 pints

Dissolve the soap in 8 ounces of water, add the ammonia water and then the benzine. Shake and add enough water to make 2 pints. Shake well.

**Benzine Jelly.**

Castile soap, powdered...	½ ounce
Alcohol .....	1 ounce
Ammonia water.....	1 ounce
Ether .....	1 ounce
Water .....	10 ounces
Benzine, about.....	1 gallon

Dissolve the soap in the water, add the other ingredients, shake well and gradually add the benzine until a creamy mixture results.

**Benzine Paste.**

Castile soap, powdered...	1 pound
Boiling soft water.....	1 pint
Sodium carbonate.....	1 ounce
Stronger ammonia water..	4 ounces
Benzine .....	1 gallon

Prepare as directed in the preceding formula.

**Cleansing Oxgall Cream.**

Oleic acid.....	1 ounce
Borax .....	2 ounces
Oxgall, fresh.....	5 ounces
Tallow soap.....	20 ounces

Triturate the borax with the oxgall, then thoroughly incorporate with it the soap, previously reduced to powder, and lastly incorporate the oleic acid.



**Benzine Paste for Taking Out Grease Spots.**

Dissolve 12 parts of soap in 20 parts of boiling water, and after cooling somewhat add 3 parts strongest ammonia water. Stir, and add, little by little, sufficient deodorized benzine to make 100 parts. The result is a gelatinous paste that is very efficacious in removing grease. It may be perfumed, if desired, with a little oil of wintergreen or bergamot. All soaps do not give equally good results. The best are obtained from soaps containing an excess of alkali.

**Benzine Cream.**

Tincture soap bark..... 12 fl. drams  
Benzine, enough to make. 8 fl. ounces

Mix and shake for half an hour, then allow to stand 12 hours to solidify.

**Benzine Cream.**

Extract of quillaja..... 1 ounce  
Borax ..... 1 ounce  
Oxgall, fresh..... 4 ounces  
Tallow soap..... 15 ounces

Triturate the borax with the extract of quillaja, and afterwards with the oxgall, which will cause at least partial solution. Then thoroughly incorporate with it the soap so as to produce a plastic mass, which may be molded into sticks or put into boxes. If no extract of quillaja is at hand, soap bark in shreds may be exhausted with boiling water, and the liquid evaporated on a water bath. One hundred parts of bark yield about 20 parts of extract.

**Oxgall Cleanser.**

Soft soap..... 1 pound  
Water ..... 2 pints  
Oxgall ..... 5 ounces  
Sodium carbonate..... 2 ounces

Dissolve the soap in the water by heat, add the oxgall and sodium carbonate and dissolve.

**Oxgall Cleanser.**

Borax ..... 1 pound  
Oxgall, purified..... 6 ounces  
Castile soap..... 1½ pounds  
Soap bark..... 1 pound  
Water, enough to make... 3 gallons

Dissolve the borax and soap in 1 gallon of water, and add the oxgall, previously rubbed up with 8 ounces of water. Make an infusion of the soap bark in 2 gallons of water, strain, and then mix with the solution.

**Household Ammonia.**

Sodium carbonate..... 5¼ pounds  
Concentrated ammonia  
water ..... 8 pints  
Water ..... 12 pints

The clear solution is decanted after standing 2 or 3 days.

**Household Ammonia.**

Soft soap..... ½ pound  
Stronger ammonia water.. 1 pint  
Water, enough to make... 1 gallon

Dissolve the soap in the water, then add the ammonia water.

**Color for Household Ammonia.**

Household ammonia waters are often colored green, violet, or pink. This can best be done by dissolving 1 dram of the respective aniline dye in 1 pint of the ammonia water and using this solution as a stock solution. An ounce of this solution is generally sufficient for a gallon of household ammonia. In buying the aniline dye, specify "for alkaline solutions."

**Household Ammonia.**

Soap (in fine shavings).. 2 ounces  
Potash lye..... 1 ounce  
Ammonia water..... 2 pints

Mix. A small quantity of alcohol is sometimes added to render the mixture clear, and the amount of soap is frequently decreased.

**Household Ammonia, Violet.**

Potassium carbonate..... 2 ounces  
Castile soap..... 2 ounces  
Stronger ammonia water.. 1 pint  
Extract of violet..... 1 ounce (or more)  
Water, enough to make... 1 gallon

Dissolve the potassium carbonate and soap in 1 pint of water, add the perfume, shake well, then add the ammonia water and enough water to make 1 gallon.

**Household Ammonia.**

Castile soap, powdered... 6 ounces  
Borax ..... 1 ounce  
Stronger ammonia water.. 1 pint  
Water, enough to make... 1 gallon

Mix and dissolve.

**Household Ammonia, Perfumed.**

Castile soap, powdered... 1 ounce  
Lavender water..... 4 ounces  
Stronger ammonia water.. 1 pound  
Water, enough to make... 1 gallon

Dissolve the soap in 8 ounces of water, add the lavender water and the ammonia and enough water to make 1 gallon.

**Detergent Solution of Ammonia (Household Ammonia).**

Stronger ammonia water.. 200 cc.  
Oleic acid..... 60 cc.  
Alcohol ..... 60 cc.  
Distilled water, enough  
to make..... 1,000 cc.

Mix. About 5 per cent of borax may be added if desired, together with a little oil of lavender or other suitable perfume.

**Howe's Economic Renovator.**

Common soap shavings... 2 ounces  
Crude potassium carbonate 1 ounce  
Powdered borax ..... 1 ounce  
Ammonia water..... 2 fl. ounces  
Soft water, enough to make 1 pint

Heat the water to boiling, digest in it the soap, then add the borax and potassium carbonate, agitate until dissolved, and strain when cool, add the ammonia water and cork well.

Use for garments.—Place a small quantity upon a sponge and rub it briskly upon the spotted garment; then wash with fresh water.

Use for wood.—Same as above, but diluted somewhat with water.

**Japanese Cleaning Cream.**

Castile soap..... 3 ounces  
Water ..... 1 gallon  
Ammonia water..... 6 ounces  
Alcohol ..... 3 ounces  
Ether ..... 3 ounces  
Glycerin ..... 2 ounces  
Oil of citronella or mir-  
bane ..... 10 drops

Mix and dissolve.

**Washing Powder.**

Sal soda, partially efflo-  
resced ..... 5 parts  
Quillaja ..... 1 part

Mix.

**Washing Powder.**

Sal soda, partially effloresced ..... 2 parts  
Soda ash..... 1 part

Mix.

**Washing Powder.**

Sal soda, effloresced..... 6 parts  
Crude potash..... 3 parts  
Borax ..... 1 part

Mix.

**Washing Powder.**

Sal soda, dried..... 5 ounces  
Borax, powdered..... 5 ounces  
Yellow soap, powdered.... 5 ounces

Mix.

**Washing Powder.**

Sal soda, partially effloresced ..... 6 parts  
Soda ash..... 1 part  
Yellow soap, in coarse powder ..... 1 part

Mix.

**Washing Powder.**

Powdered castile soap.... 5 pounds  
Powdered sodium borate... 3 pounds  
Powdered sodium silicate.. 2 pounds

Mix.

**Washing Powder.**

Castile soap, powdered... 6 pounds  
Sodium carbonate, dried... 2 pounds  
Pearlash ..... 1 pound  
Sodium sulphate, dried.... 1 pound

Mix.

**Washing Powder.**

Powdered soap..... 1 pound  
Sodium carbonate..... 1 pound  
Borax ..... 1 pound  
Oil of eucalyptus..... 1 dram

Mix.

**Washing Powder.**

Powdered soap..... 5 pounds  
Sodium carbonate..... 3 pounds  
Soap bark, in fine powder ..... 1 pound  
Oil of eucalyptus..... 2 drams

Mix.

**Washing Powder.**

Soap bark, powdered..... 1 pound  
Borax, powdered..... 2 pounds  
Soap, powdered..... 6 pounds  
Sodium carbonate..... 1 pound  
Oil of eucalyptus..... ½ ounce  
Oil of wintergreen..... ½ ounce

Mix.

## GREASE, TO REMOVE FROM FABRICS, GLOVES, ETC.

**Grease Spots, to Remove.**

Benzine, 20 ounces; alcohol (strong), 5 ounces; ether, 2 drams; ammonia water, 1 dram.

Mix and shake well before using.

**Grease Spots, to Remove.**

(Imitation Javelle Water.) Bleaching powder, 1 ounce; potassium carbonate, 1 ounce; water, 33 ounces. Triturate the bleaching powder in the cold with 25 ounces of water, then add the potassium carbonate, previously dissolved in the rest of the water; shake well and let it settle. The supernatant solution is filtered, if necessary, and mixed with 1 ounce of hydrochloric acid, when it is ready for use.

**Grease Spots, to Remove.**

Chlorinated lime..... 1 pound  
Alum ..... 4 ounces  
Water ..... 1 gallon

Dissolve the lime in ½ gallon of water, add the alum dissolved in 1 pint of water, stir, add the remainder of the water, and decant the clear liquid.

**Grease Spots, to Remove.**

Benzine ..... 2 pints  
Oil of wintergreen..... 2 drams  
Ether ..... 4 drams  
Chloroform ..... 4 drams

Mix.

**To Remove Axle Grease.**

If spots of axle grease, varnish, etc., are not completely removed from clothes by the application of benzine, place the garment upon a flat cake of plaster of Paris or upon some folds of blotting paper, moisten it with some sulphuric ether and rub gently with a soft brush or clean cotton rag. If necessary, repeat. This must be done by day only, the ether vapor being exceedingly inflammable and dangerous to handle where there is an open fire or light or hot stove.

**To Remove Tar, Axle Grease, Etc.**

White cottons and linens.—Soap, oil of turpentine and water, each applied in turns.

**To Remove Tar, Axle Grease, Etc.**

Colored cottons and woolens.—First smear with lard, rub with soap and water, and let it stand a short time; then wash with oil of turpentine and water alternately.

**To Remove Tar, Axle Grease, Etc.**

Silks.—The same, using benzine instead of turpentine, and dropping the water from a certain height on the under side of the stain. Avoid rubbing.

**Axle Grease, Tar, etc., to Remove.**

Moisten the spots with a sponge dipped in turpentine, cover with filter paper and apply a hot iron. Repeat the treatment, if necessary. Finally wash the goods in warm soap water.

**Axle Grease, Tar, etc., to Remove.**

Cover the spot with the yolk of an egg mixed with some turpentine and hot water. Allow to dry. Scratch off and wash with hot water, then wash in water to which a little hydrochloric acid has been added. Finally rinse in clear water.

**Axle Grease, Tar, etc., to Remove.**

Old stains should be softened by moistening them for some time with olive oil. Then place layers of filter paper under the stain and wash repeatedly with turpentine, benzine and hot water. Renew the filter paper and wash again.

**Balls for Cleaning.**

Common soap, 1 pound; oxgall, ½ pound; Venice turpentine, 1 ounce. Mix.

**Balls for Scouring—Breeches Balls, Clothes Balls.**

Pipe clay..... 3 ounces  
White pepper..... 1 dram  
Starch ..... 1 dram  
Orris root..... 1½ drams

Mix. It may be kept in powder, or formed into balls with soft soap.

**Balls for Scouring—Breeches Balls, Clothes Balls.**

Pipe clay..... 4 ounces  
 Fuller's earth.....  $\frac{1}{2}$  ounce  
 Whiting.....  $\frac{1}{2}$  ounce  
 White pepper.....  $\frac{1}{4}$  ounce  
 Oxgall, sufficient to form it into a paste.  
 Mix.

**Balls for Scouring—Breeches Balls, Clothes Balls.**

Bath brick..... 4 parts  
 Pipe clay..... 8 parts  
 Pumice ..... 1 part  
 Soft soap..... 1 part  
 Ochre, umber or other color to bring  
 it to the desired shade, q. s.  
 Oxgall, to form a paste.

Make the mixture into balls and dry them.

**Scouring Balls.**

Yellow soap..... 8 ounces  
 Wood alcohol..... 1 pint  
 Yolks of eggs..... 8  
 Oil of turpentine..... 2 ounces

Dissolve the soap in the wood alcohol by heat, add the yolks and oil of turpentine and form into balls with the aid of light magnesium carbonate.

**Scouring Balls.**

Soft soap..... 1 pound  
 Fuller's earth..... 1 pound

Beat them well together and form into balls or cakes. The stain, moistened with water, is rubbed with the cake and allowed to dry. Then wash and rinse with clean water.

**Balls for Cleaning.**

Powdered castile soap.... 1 pound  
 Powdered borax ..... 4 ounces  
 Oxgall ..... 4 ounces  
 Turpentine, enough to form balls.

Mix.

**Balls for Cleaning.**

Shavings of soap,  $\frac{1}{2}$  pounds; oxgall,  $\frac{1}{2}$  pounds; honey, 1 ounce; sugar,  $\frac{1}{2}$  ounces; turpentine,  $\frac{1}{4}$  ounce. Mix.

**Balls for Cleaning.**

(To remove pitch, wax, paint, etc.) White soap, 15 ounces; pure potash, 3 ounces, oil of turpentine, 2 ounces. Form into balls.

**Blankets, to Clean.**

When soiled, they should be washed, and not scoured, which latter they will be if sent to the scourer's. Shake all the dust from them, plunge them into plenty of hot soap-suds, let them lie till the hands can be borne in the water, wash quickly, rinse in new, clean, hot suds, shake thoroughly, stretch well, dry, and they will be as nice as new.

**Calico and Linen, to Clean.**

When discolored by age or washing, restore the whiteness by bleaching in the sun, out of doors.

**Calico and Linen, to Clean.**

Lay the linen for 12 hours in a lye made of 1 pound of washing soda to a gallon of boiling, hot soft water; then boil for a half hour in the same liquid. Next make a mixture of chlorinated lime with 8 times its quantity of water, which must be well shaken in a stone jar at intervals for 3 days; then allow to settle, and being drawn off clear, the linen must be steeped in it for 36 hours, and then washed out in the ordinary way.

**Calico and Linen, to Clean.**

To one gallon of boiling water add 1 ounce of potassium chlorate and one ounce of muriatic acid. Soak the linen in this mixture for three hours, stirring often. Then rinse in clean water and dry.

**Carpet Cleaning Composition.**

For cleaning carpets on the floor, use 1 pint oxgall to a pailful of water; after washing apply cold water to rinse out the oxgall, and finally sponge as dry as possible.

**To Remove Grease From Carpets.**

Mix a little soap into a gallon of warm soft water, then add  $\frac{1}{2}$  ounce of borax; wash the part well with a clean cloth.

**To Clean Carpets.**

If brooms are wet with boiling suds once a week they will become very tough, will not cut a carpet, and will last much longer. A handful or so of salt sprinkled on a carpet will carry the dust along with it and make the carpet look bright and clean. A very dusty carpet must be cleaned by dipping the broom in cold water, shaking off all the drops, and sweeping a yard or so at a time. Wash the broom and repeat until the entire carpet has been swept.

**Carpet Soap.**

Fuller's earth..... 4 ounces  
 Spirit turpentine..... 1 ounce  
 Pearlash ..... 8 ounces  
 Soft soap, enough.

Mix the first three ingredients and make into a stiff paste with soft soap.

**To Clean Carpets.****(1st Solution.)**

Ammonia water..... 1 pint  
 Alcohol .....  $\frac{1}{2}$  pint  
 Water .....  $\frac{1}{2}$  pint

Mix.

**(2nd Solution.)**

Soap ..... 1 pound  
 Water ..... 2 pints  
 Washing soda..... 5 ounces  
 Ammonia water..... 1 ounce

Mix and dissolve.

Sprinkle the first solution on the carpet with a fine watering can, allow to dry, now, apply the second solution and sweep.

**Grape Stains on Carpets.**

Wash with warm soapsuds and a little ammonia water.

**Floors, to Extract Paraffin Oil From.**

Apply a strong hot solution of oxalic acid, and afterwards use the scrubbing brush.

**Floors, to Clean.**

Scatter with clean sifted white or silver sand. Sprinkle sand with a solution of one pound American potash to one pint of water. Scrub the boards lengthwise with a hard brush, using very hot water and best mottled soap. Change the water frequently. Ink stains may be removed by rinsing with strong vinegar.

**Cleaning and Restoring Inlaid Floors.**

Boil 1 part of calcined soda with 1 part of slaked lime and 16 parts of water for forty-five minutes, and with the lye thus made mop up the floor. When nearly dry scrub the latter with a stiff brush, with fine sand and water to remove old wax, grease, etc. Wipe off and give a coat of dilute sulphuric acid (acid, 1 part; water, 8 parts). Let dry, rinse off with plenty of water, again let dry, and finish with wax in the usual manner.



**Glove Cleaner.**

White soap.....4½ drams  
 Hot water.....2½ drams  
 Rub into a paste and add:  
 Solution of chlorinated  
 soda .....2½ drams  
 Ammonia water.....20 minims  
 Mix.

**Glove Cleaner.**

Lay the gloves upon a clean board, make a mixture of dried fuller's earth and powdered alum, and pass them over on each side with a stiff brush. Then sweep the dust off and sprinkle them well with dry bran and whiting and dust them well.

**Glove Cleaner.**

Stronger ammonia water.. ½ ounce  
 Solution of chlorinated  
 soda ..... 8 ounces  
 Distilled water..... 9 ounces  
 Yellow soap, in fine shreds 12 ounces  
 Make into a paste, and apply with a clean piece of flannel.

**Glove Cleaner.**

Take fine curd soap, one pound, scrape it into a fine powder, put into a jar and pour upon it from time to time sufficient strong alcohol to make it into a thick jelly; add one teaspoonful of ether or one-half teaspoonful solution of potassa, mix and put into bottles well corked. To use, put the gloves on the hand, rub on the preparation with a piece of flannel, when the dirt will disappear.

**Glove Powder.**

Pipe clay, colored with yellow ochre, umber or Irish slate, a sufficient quantity, and afterward scented with a little powdered orris root, or cloves. Used to clean gloves made of doeskin and similar leather.

**Kid Glove Cleaner (Jouvin's).**

Javelle water..... 8½ fl. ounces  
 Ammonia water..... ½ fl. ounce  
 Powdered castile soap.....12½ ounces  
 Water ..... 9½ fl. ounces  
 Mix and allow to stand until a jelly forms, then use with a piece of flannel.

**Glove Cleaner.**

To clean kid gloves, have ready a little new milk in one saucer, a piece of white soap in another, and a clean cloth folded 2 or 3 times. On the cloth spread out the glove smoothly and neatly. Take a piece of flannel, dip it in the milk, then rub off a good quantity of soap on the wetted flannel, and commence to rub the glove toward the finger, holding it firmly with the left hand. Continue this process until the glove, if white, looks of a dingy yellow, though clean; if colored, till it looks dry and spoiled. Lay it to dry, and the operator will soon be gratified to see that the old glove looks nearly new. It will be soft, glossy, smooth and elastic.

**Glove Powder.**

Castile soap, dried by exposure to a warm, dry atmosphere for a few days, and then reduced to fine powder in a mortar.

**Glove Cleaner.**

Add 15 drops of strongest ammonia water to oil of turpentine, ½ pint. Having fitted the gloves on wooden hands, apply this mixture with a brush. Follow up this application with some fine pumice powder. Rub with some flannel or sponge dipped in the mix-

ture. Rub off the pumice and repeat the same process twice or thrice. Hang in the air to dry and when dry place in a drawer with some scent. Benzol is largely used as a glove cleaner.

**Glove Cleaner.**

Powdered soap..... 1 ounce  
 Water ..... 4 ounces  
 Oil of lemon..... ½ dram  
 French chalk, enough.

Dissolve the soap in the water, add the oil of lemon, and make into a paste with the chalk.

**Glove Cleaner.**

Powdered soap..... 1 ounce  
 Water ..... 4 ounces  
 Powdered orris root, enough.

Dissolve the soap in the water and make into a paste with orris root.

**Glove Cleaner.**

White soap..... 25 ounces  
 Warm water..... 15 ounces  
 Javelle water..... 15 ounces  
 Ammonia water..... 1 ounce

Dissolve the soap in the water by heat, then add the other ingredients and mix.

**Glove Cleaner.**

Soft soap..... 1 ounce  
 Water ..... 4 ounces  
 Oil of bergamot..... 1 dram  
 Precipitated chalk, enough.

Dissolve the soap in the water, add the oil and make into a stiff paste with the chalk.

**Glove Cleaner.**

White bole..... 1 pound  
 Orris root, powdered..... ½ pound  
 Soap, powdered..... 2 ounces  
 Sodium borate, powdered..... 4 ounces  
 Ammonium carbonate..... ½ ounce

Powder and mix. Dampen the glove and sprinkle on the powder. Rub well, let dry and brush.

**Glove Cleaner.**

Castile soap..... 1 ounce  
 Chloroform ..... 1 dram  
 Alcohol ..... ½ ounce  
 Ammonia water..... 1 ounce  
 Sodium carbonate..... ½ ounce  
 Water ..... 4 pints

Dissolve the castile soap and the ammonium carbonate each in a pint of water and mix; add the ammonia water. Then add the alcohol in which the chloroform has been dissolved. Mix well.

**Glove Cleaner.**

Stronger ammonia water.. ½ ounce  
 Glycerin ..... 2 ounces  
 Ether ..... 2 ounces  
 Castile soap..... 2 ounces  
 Water ..... 4 pints

Dissolve the soap in the water, add the other ingredients and mix.

**Glove Cleaner.**

Kaolin ..... 1 pound  
 Talcum ..... 8 ounces  
 Borax ..... 4 ounces  
 Soap ..... 2 ounces  
 Ammonium chloride..... 1 ounce

Mix and apply with a damp cloth.

**Glove Cleaner.**

Tincture of soap bark.... 3 ounces  
 Benzine ..... 13 ounces

Mix. Shake well before using.

**Glove Cleaner.**

Castile soap.....	3 ounces
Borax .....	3 ounces
Soap liniment.....	5 ounces
Alcohol .....	8 ounces
Ammonia water.....	10 ounces
Water .....	1 gallon

Dissolve the soap and borax in a pint of water, add the other ingredients, shake well, and add the remainder of the water.

**Non-inflammable Clothes Cleaner.**

Rosin soap.....	1 pound
Common white soap.....	1 pound
Potassium hydroxide.....	3 ounces
Alcohol .....	8 fl. ounces
Carbon tetrachloride.....	5 pints
Water, sufficient.	

Melt the soaps together on a water bath, adding to them a little water from time to time as required. Dissolve the potassium hydroxide in the alcohol; add to this solution 1½ pints of carbon tetrachloride, and incorporate the liquid in the soap mass, beating the whole with an egg beater. Transfer the pasty mass to a suitable bottle, add the rest of the carbon tetrachloride and mix the whole by agitation. The compound should at once be transferred to wide-mouthed bottles of the size desired for the market and these immediately corked tightly.

**Cleaning White Canvas Shoes.**

Pipe clay .....	1 pound
Spanish white.....	½ pound
Flake white.....	6 ounces
Precipitated chalk.....	4 ounces
Powdered tragacanth.....	2 drams
Carbolic acid.....	2 drams
Verberna oil.....	30 drops
Water, to make a thick cream.	

The powders are well mixed with the perfume and carbolic acid, and then made into a cream with water.

**Chamois Skin, to Clean.**

Keep a wet towel lying on the skin face until the dirt is thoroughly softened, say three or four days, occasionally rubbing off with a sponge; then rub with clear nut or linseed oil.

**Chamois Skin, to Clean.**

Rub well over with soft soap until clean. Rinse in warm water, to which soda has been added, and use yellow soap. After rinsing, wring well in rough towel, dry quickly, rub and work well in hands to soften.

**Wash Leather, To Cleanse.**

Wash the soiled polishing leather in a weak solution of soda and warm water, then rub a good deal of soap into the leather and let it soften for two hours. It is afterwards thoroughly washed until perfectly clean, and rinsed in a weak solution of warm water, soda and yellow soap. It must be washed in water alone, or it will become so hard when dry that it cannot be used again. It is the small quantity of soap remaining in the leather which penetrates its smallest particles and makes the leather as soft as silk. After the rinsing, it is wrung out in a coarse towel and dried quickly. It is then pulled in every direction and well brushed, after which it is softer and better than most wash leather when first bought. If rough leather is used to finish highly polished surfaces, it will be often observed that the surface is scratched or injured. This is caused by particles of dust, and even grains of hard rouge that were left in the leather. As soon as they are re-

moved with a clean brush and rouge, a perfectly bright and beautiful finish can be obtained.

**Paint and Varnish Remover.**

Potassium hydroxide.....	1 pound
Acetone .....	40 ounces
Methylated spirit.....	20 ounces
Oil of turpentine.....	20 ounces
Petroleum spirit.....	20 ounces
Castor oil.....	10 ounces

Mix. To use, spread thinly over the old paint or varnish. After a few minutes, a second application is made, when the softened paint or varnish can generally be easily removed with a cloth or blunt spatula.

**Paint Brushes, to Clean.**

To clean old paint brushes which have become hard with paint, soak the brushes 24 hours in raw linseed oil; then rinse in hot oil of turpentine, repeating the process until clean.

**Paint Brushes, to Clean.**

Clean with turpentine, pressing out all particles of color upon a marble slab, and then suspend in jars of water, not allowing them to touch the bottom. Change the water twice a week.

**Paint Brushes, to Clean.**

Soften the brush, if hard, with cottonseed oil, then wash alternately with turpentine and a warm weak solution of sodium carbonate (1:100) until clean.

**Hair Brushes, To Clean.**

Dissolve a piece of washing soda the size of a walnut in a quart of water. After combing out the hair from the brushes, dip them, bristles downward, in and out of this solution, keeping the backs and handles as free from the water as possible. Repeat this until the brushes look clean. Then rinse in cold water, shake well and wipe the backs and handles with a towel, but not the bristles, as it makes them soft, as does also the use of soap. Set the brushes in the sun or near a gentle fire.

**Brush Powder.**

Sodium carbonate, dried.... 2 ounces

Castile soap, powdered.... 2 ounces

Mix well. A teaspoonful to a quart of warm water. Prepare as directed in the preceding formula.

**Tar or Pitch on the Skin.**

Rub well with pulverized licorice mixed with oil of anise, to the consistency of cream, and lastly wash with soap and water.

**Grease Spots, to Kill Before Painting.**

Give the surface a wash with saltpetre in solution or very thin lime whitewash. Soap-suds, if used, must be well rinsed off or the paint will not dry over it.

**To Remove Stains of Oil Paint.**

Use carbon disulphide or oil of turpentine; if the stains are dry and old, use chloroform.

**To Remove Oil Stains From Woolen Goods.**

Oil of turpentine mixed with benzine, followed by hot soapsuds.

**To Remove Oil Stains From Silk.**

Use first benzine, then ether and finally, soapsuds. Avoid hard rubbing. Put blotting paper under the stain.

**To Remove Oil Stains.**

If other methods fail, use chloroform, applying it carefully with a soft sponge.

**Paint and Varnish Stains.**

If the stains are old and hard, they should be softened in olive oil. They can then be removed like grease stains.

**Oil, Paint and Varnish Stains.**

Cover the stains with a mixture of equal parts of oil of turpentine and ammonia water. When soft, wash with soapsuds.

**To Clean Showcases.**

Use a powder formed by dissolving 1 part of ammonium carbonate in 4 parts of water, and adding 16 parts of Spanish whiting. To use, dip a moistened sponge into the mass and with it go over the plated work, let dry on, and when dry, rub off with a soft brush. The same mixture, used in the same manner, will serve equally well for cleaning plate-glass windows.

**Paper, to Remove Stains From.**

The process must depend on what the stains are. If they are those of writing ink, a solution of citric, tartaric, or oxalic acid will be successful. If grease, take a heated iron and press it upon blotting paper placed on the stains. After this process has been frequently repeated, take a soft brush and apply oil of turpentine to the stains on both sides of the paper; lastly, with a clean brush, apply to the spots already almost gone rectified spirit of wine.

**Oil Stains on Paper.**

Apply pipe clay, powdered and mixed with water to the thickness of cream; leave on for four hours.

**To Remove Grease Stains From Paper.**

Warm the stained paper, lay blotting paper upon the stained spot and press it gently with a hot iron. Or, heat rectified oil of turpentine to the boiling point and cover both sides of the stain until it can no longer be seen. Then dip a small brush in strong spirit of wine and brush the spot several times where the stain has been. This restores the original whiteness of the paper, and, when ironed, gives it smoothness and lustre.

**Oil Stains on Paper.**

Oil or fat stains, even when old, may be removed from paper or similar fabrics by means of a mixture of benzol and magnesia. Calcined magnesia is mixed with sufficient quantity of benzol to produce a mass which becomes granular after a while. A little of this mixture is rubbed with the finger upon the stain, and the little granules of magnesia afterward wiped off. Fresh stains usually disappear entirely, old ones after a short time, particularly if the treatment is repeated two or three times. A great advantage of this method is that it may be used upon the finest kinds of paper and that it scarcely affects printed paper; prolonged contact only rendering the printing paler. The mixture should be preserved in well-closed glass-stoppered vials.

**Paper, to Clean.**

Powdered fuller's earth, pressed lightly on the greasy spot, and allowed to remain for hours, will soak out the grease.

**Paper, to Clean.**

Wash successively with ether and chloroform, place between blotting paper and apply a hot iron.

**Paper, to Clean.**

Put pipe clay or French chalk on both sides of the paper, cover with blotting paper and apply a hot iron.

**Paper, to Remove Iodine Stains.**

Moisten blotting paper with a solution of sodium hyposulphite, and another portion of blotting paper with ammonia water. Apply one layer of the impregnated blotting paper after the other on the stain and wash the stained paper between blotting paper with clean water. Finally apply a hot iron.

**To Remove Tar, Grease, Oil and Varnish From Silk.**

Rub the stains with a white cloth moistened with a mixture of equal parts of oil of turpentine and ether, until no impure matter adheres to it. Cover the stain about the thickness of a knife blade with pulverized white bole, upon which place blotting paper and press a hot iron. Repeat until the stain has disappeared.

**Grease Spots, to Take Out of Silk.**

Take a lump of magnesia and rub it wet over the spot; let it dry; then brush the powder off, and the spot will disappear; or, take a visiting card, separate it, and rub the spot with the soft internal part, and it will disappear without taking the gloss off the silk.

**Sweeping Compound.**

Paraffin oil.....	30 fl. ounces
Sawdust .....	7 pounds
Ground oil cake.....	10 pounds
Linseed meal.....	5 pounds
Oil of eucalyptus.....	3 fl. ounces

Mix the paraffin oil and sawdust thoroughly, and then incorporate the other ingredients. Some operators add fine sand to sweeping compounds, but it is unnecessary. Bran is also substituted for the ground oil cake, but it is not nearly so useful.

**Sweeping Compound.**

The following is a representative formula for a sweeping compound to prevent dust from rising when sweeping floors or carpets:

Dry sawdust.....	10 pounds
Paraffin oil.....	½ pint
Paraffin wax.....	2 ounces
Coarse salt.....	½ pound
Eucalyptus oil.....	2 ounces
Sea sand.....	4 pounds

Warm the paraffin oil and mix with the melted wax, dissolve in the mixture any aniline color required, add the eucalyptus oil, and saturate the sawdust. Then mix with the sand.

**Formaldehyde Soap.**

Oleic acid.....	32 ounces
Rectified spirit.....	12 ounces
Caustic potash.....	4 ounces
Distilled water.....	12 ounces
Formaldehyde solution 40 per cent.....	50 ounces

Mix the acid and the spirit, dissolve the potash in the water, and add gradually to the acid solution, shaking well. Set aside for a day (or over night), and add the formaldehyde solution.

**LAUNDRY BLUE.****Laundry Blue.**

Dissolve indigo sulphate in cold water and filter.

**A Disinfective Laundry Blue.**

Mix together 16 parts of Prussian blue, 2 parts of carbolic acid, 1 part of borax, and 1 part of gum arabic into a stiff dough. Roll it out into balls as large as hazel nuts, and coat them with gelatin or gum, to prevent the carbolic acid from escaping.



**Laundry Blue.**

Soluble blue.....	2 drams
Oxalic acid.....	½ dram
Water .....	2 pints

Mix.

**Liquid Wash Blue.**

Pulverize 1 ounce of solid indigo in a porcelain dish, and add 4 ounces of sulphuric acid. Let it stand for six hours with frequent stirring with a wooden or glass rod, and pour into a flask containing one-half gallon of water, not too cold. Throw powdered chalk into the flask until effervescence ceases, in order to remove the sulphuric acid, which is injurious to the clothes. The whole is then allowed to stand quietly for a few days, then filtered through blotting paper, and can be kept for years without fear of spoiling.

**Soluble Blue.**

Pure soluble Prussian blue is prepared by digesting an excess of Prussian blue paste with a saturated solution of oxalic acid. The filtrate, after standing for two months, deposits the pure blue, the liquid itself becoming colorless. The color is washed with weak alcohol and dried. It now dissolves readily in pure water. The same result is obtained more rapidly by precipitating the oxalic acid solution with 95 per cent alcohol, or a concentrated solution of soda, and washing the color with weak alcohol. Tartrate or oxalate of ammonium can take the place of the oxalic acid in the above reactions. On boiling the oxalic acid solutions ordinary insoluble blue is precipitated. Dilute sulphuric acid also precipitates an insoluble blue.

**Laundry Blue.**

Aniline blue, 6 B.....	1 ounce
Water .....	1 pint

Mix and dissolve.

**Laundry Blue.**

Indigo carmine.....	1½ ounces
Gum arabic.....	¾ ounce
Water .....	1 pint

Mix and dissolve.

**Laundry Blue.**

Ultramarine .....	6 ounces
Sodium carbonate.....	4 ounces
Glucose .....	2 ounces

Mix and make into tablets or balls.

**Laundry Blue.**

Soluble aniline blue.....	1 ounce
Starch .....	15 ounces
Glucose, enough to make a paste.	

Mix and add sufficient glucose to make a stiff paste, form into balls or tablets.

**Starch Gloss.**

Spermaceti, gum senegal and borax each 1 part, glycerin, 2½ parts, and 24½ parts of water. Two or three teaspoonfuls are to be added to ¼ of a pound of boiled starch.

**Liquid Starch Gloss.**

Glycerin .....	2 ounces
Oil of turpentine.....	2 ounces
Borax .....	2 ounces
Starch .....	1 pound
Water .....	6 pints

Rub the starch with water to make a smooth paste, add the remainder of the water in which the borax has been dissolved. Then add the glycerin and oil of turpentine. Mix well.

**Glazing Starch.**

Melt 5 parts of stearic acid, add 5 parts of absolute alcohol, and triturate the mixture with 95 parts of wheat starch. Starch prepared from this takes easily a fine polish. The effect is the same as adding a piece of stearin to the starch before the boiling water is poured upon it.

**Starch Gloss.**

Borax powder.....	1 pound
French chalk.....	1 ounce
Castile soap, powdered....	2 ounces
Starch .....	2 ounces

Mix well. One teaspoonful of this powder to be used with a tablespoonful of starch.

**Starch Gloss.**

Spermaceti, powdered....	1 ounce
Borax .....	1 ounce
Starch .....	4 ounces

Mix. A teaspoonful to a tablespoonful of starch.

**Liquid Starch Gloss.**

Spermaceti .....	1 ounce
Gum arabic.....	1 ounce
Borax .....	1 ounce
Glycerin .....	2½ ounces
Water .....	14½ ounces

Dissolve the borax and spermaceti in 10 ounces of boiling water; dissolve the gum arabic in 4½ ounces of water mixed with the glycerin, strain and mix the two solutions.

**Cold Water Starch (Liquid).**

Sago flour.....	5 pounds
Common salt.....	2 pounds
White dextrin.....	1 pound
Glycerin .....	1 pint
Water .....	7 pints

Mix and dissolve.

**Cold Water Starch (Powder).**

Sago flour.....	4 pounds
Rice starch.....	1 pound
Dried common salt.....	1 pound
Powdered borax.....	1 pound
White dextrin.....	1 pound

Mix.

**Carbolic Disinfecting Powder.**

Carbolic acid.....	2 gallons
Kieselguhr .....	14 pounds
Gypsum .....	100 pounds
Red ochre.....	½ pound

Grind the gypsum in a roller mill with the ochre. Mix the kieselguhr with twice its weight of the powder, add the acid gradually to this, stirring well; then add the rest of the powder. Sift through a fine sieve.

**CLEANING WALLS, ETC.****Wall Paper, to Extract Grease Stains From.**

Oil marks can be taken from the paper on drawing-room walls, and marks where people have rested their heads, by mixing pipe clay with water to the consistency of cream, laying it on the spot, and letting it remain till the following day, when it may be easily removed with a penknife or brush.

**To Clean Papered Walls.**

Wipe papered walls down with a flannel cloth tied over a broom or brush. Then cut a thick piece of stale bread with crust on, and rub them down with this. Begin at the top and go straight down.

**Cleaning Wall Paper.**

Take fresh made dough from white flour, to which has been added a few drops of ammonia water. Go carefully over the paper and as the dirt accumulates on the outside of the dough work it to the inside, and as the ammonia evaporates, add a few drops from time to time.

**Grease on Wall Paper, Removing.**

Lay several folds of blotting paper on the spot and hold a hot iron upon it until the grease is absorbed.

**Composition for Cleaning Wall Paper.**

Mix together 1 pound each of rye flour and white flour into dough, which is partially cooked and the crust removed. To this 1 ounce of common salt and  $\frac{1}{2}$  ounce of powdered naphthalene are added, and finally 1 ounce of corn meal and  $\frac{1}{2}$  ounce of burnt umber. The composition is formed into a mass, of the proper size to be grasped in the hand, and in use it should be drawn in one direction over the surface to be cleaned.

**Wall Paper, to Clean.**

Put a little bran on the flat surface of a soft sponge and rub the walls down. Do not use the same bran twice.

**Tapestry Paper, to Clean.**

Powdered pumice..... 1 pound  
Wheat flour..... 6 pounds

Mix and form into a paste with water. Roll the mass into cylinders 2 or 3 inches in diameter and 8 inches long. Inclose these in muslin and boil for an hour. Dry for 12 hours and remove the muslin. Use the sticks for cleaning.

**Walls, Smoky, to Clean.**

Brush well, wash with a strong solution of pearlsh, then rinse at once with clean water. Give the wall, when dry, a thin coat of fresh slaked lime, with considerable alum dissolved in hot water added. After this has dried apply whitening and gold size.

**INK STAINS, TO REMOVE.**

Ink stains on paper or cloth must be treated according to the composition of the ink. The old fashioned lasting ink consists chiefly of tannate of iron and to remove it, a chemical that will convert the tannin into some soluble colorless iron salt must be used. Oxalic acid is best suited for this purpose. Modern inks are solutions of aniline derivatives or dyes and cannot be converted into colorless compounds so easily. Tartaric acid is a good solvent for many such compounds, and chlorine is also useful as a bleaching agent. All of the so-called "ink removers" are based on the application of these two fundamental rules, and compounded accordingly.

**To Remove Ink Spots.**

Take a thick blotting paper or board, steep it several times in a solution of oxalic acid or potassium oxalate. Then dry it. If there is a spot to be taken away, apply the blotter, which has been prepared in this fashion, to the same.

**To Remove Ink Stains.**

Tartaric acid..... 1 ounce  
Alum ..... 1 ounce  
Water ..... 4 ounces  
Mix and dissolve.

**To Remove Ink Spots.**

Oxalic acid..... 1 ounce  
Water ..... 1 pint  
Dissolve. Dip the stain in this solution, using at first a weak solution.

**"Encrivoir," or Liquid to Remove Ink Spots.**

Tartaric acid..... 10 ounces  
Alum ..... 10 ounces  
Distilled water..... 10 ounces  
Mix and dissolve by gentle heat.

**To Remove Ink Stains.**

Tartaric acid..... 4 ounces  
Alum ..... 1 ounce  
Water ..... 1 pint  
Mix and dissolve.

**Alizarine Ink Stains.**

Colored cottons and woollens and silks.—A weak solution of tartaric acid, if the color allows of its use.

**Alizarine Ink Stains.**

White cotton and linens.—Tartaric acid in solution; the older the stain, the more concentrated the solution should be.

**To Remove Ink Stains.**

Solution of chloride of lime, 1 ounce, and acetic acid, 2 drops, makes a fluid that will remove ink marks or stains.

**Ink Stains, to Remove.**

Potassium oxalate..... 1 ounce  
Cream of tartar..... 2 ounces  
Mix well. Sprinkle a little on the stain and apply a damp cloth. Repeat till the stain disappears, then wash with water.

**Ink Stains, to Remove.**

Oxalic acid, powdered..... 4 ounces  
Citric acid, dry, powdered 1 ounce  
Mix. Apply as directed in the preceding.

**Aniline Ink Stains.**

(Solution No. 1.)

Ammonia water..... 1 ounce  
Water ..... 1 gallon  
Mix.

(Solution No. 2.)

Diluted nitromuriatic acid 4 ounces  
Wash the stain in Solution No. 1. Rinse with warm water. Spread the cloth over a basin with hot water. Brush Solution No. 2 on the spot, dipping the stain in the hot water after each application. Repeat till removed.

**Ink Stains.**

Cream of tartar..... 2 ounces  
Citric acid..... 2 ounces  
Mix. Use as directed in the cream of tartar formula given above.

**Ink Stains.**

(Solution No. 1.)

Oxalic acid..... 4 ounces  
Boiling water..... 8 ounces  
Mix.

(Solution No. 2.)

Chlorinated lime..... 1 ounce  
Water ..... 1 gallon  
Mix.

Dip the stain in Solution No. 1, then wash with No. 2, and rinse in clean water. Repeat till the stain disappears.

**Ink Stains.**

Sodium pyrophosphate..... 4 ounces  
 Water ..... 2 pints  
 Mix and dissolve. Soak the stain in the solution and wash with clean water.

**Ink Stains.**

When the colors of the fabric are affected by acids, try the following: Moisten the spots with fresh milk and cover with fine salt.

**Ink Stains.**

If the fabric is fine and delicate, the stained portions may be dipped in melted tallow and then pressed for some time between layers of warm pipeclay.

**Ink Stains.**

Moisten with hydrogen peroxide, to which a little ammonia has been added. Dry with exposure to light.

**Copying Ink Stains.**

Ammonia water..... 1 ounce  
 Alcohol..... 5 ounces  
 Mix. Wash the stained portions in this solution, using hot water afterwards.

**Stains, Copying Ink.**

Caustic soda.....  $\frac{1}{2}$  ounce  
 Ammonia water..... 3 ounces  
 Water, enough to make... 1 pint  
 Mix and dissolve.

**Ink Stains, to Remove From Books.**

First wash the paper with warm water, using a camel-hair pencil for the purpose. By this means the surface ink is got rid of; the paper must now be wetted with a solution of potassium oxalate, or, better still, oxalic acid, in the proportion of 1 ounce to  $\frac{1}{2}$  pint of water. The ink stains will immediately disappear. Finally, again wash the stained place with clean water, and dry it with white blotting paper.

**To Remove Ink From Carpets.**

First take up as much as possible of the ink with a teaspoon. Then pour cold sweet milk upon the spot and take up as before, pouring on milk until at last it becomes only slightly tinged with black. Then wash with cold water and absorb with a cloth without too much rubbing.

**To Remove Ink Stains From Silk.**

Moisten the stain with strong white wine vinegar and rub some warm beechwood ashes upon it and finally wash with soap water. Should the color suffer from the vinegar mix some beef gall and water and wash the stain with it.

**To Remove Ink Stains From Wood.**

Prepare a mixture of 8 ounces of concentrated sulphuric acid and  $1\frac{1}{4}$  pints of water. Scour the stain thoroughly with water and sand, then pour some of the mixture upon it and rub until the stain has disappeared.

**Indelible Ink Stains.**

Copper chloride completely removes, even from colored woven tissues, stains occasioned by silver nitrate; the tissue is afterwards washed with a solution of sodium hyposulphite and next thoroughly washed with water.

From white cotton and linen tissues, the stains are more readily and effectually removed by applying dilute solution of potassium permanganate with hydrochloric acid, followed by washing with sodium hyposulphite

solution, and rinsing in plenty of fresh water. By these means the use of the highly poisonous cyanide is rendered unnecessary.

**Indelible Ink Stains.**

The staining principle of common indelible ink is silver nitrate, and may be removed by first soaking in a solution of common salt, which produces silver chloride, and afterwards washing with ammonia water, which dissolves the chloride.

**Indelible Ink Stains.**

The stains may also be removed by a solution of 10 grains of potassium cyanide and 5 grains of iodine to an ounce of water; or a solution of 8 parts of mercury bichloride and ammonium chloride in 125 parts of water.

**Indelible Ink Stains.**

A solution of potassium iodide will freely dissolve iodine. Silver stains moistened for a while with this solution will be converted into silver iodide, which is soluble in potassium iodide. The stains will have disappeared when the cloth, after the foregoing treatment, is washed in water.

**Indelible Ink Stains.**

Wash the stained cloth with a concentrated solution of zinc sulphate or zinc chloride, and then touch with a piece of metallic zinc. After the color has disappeared, the cloth is first washed with pure water and then with water and soap.

**Indelible Ink Stains.**

Wet with a solution of chlorinated lime, and afterwards rinse in a weak solution of ammonia or sodium hyposulphite.

**Indelible Ink Stains.**

Rub with tincture of iodine, then wash with ammonia.

**Red Ink Stains.**

Alcohol ..... 4 ounces  
 Nitric acid.....  $\frac{1}{2}$  dram

Mix and moisten the stain, rinse afterwards with clean water.

**Red Ink Stains.**

Sodium nitrate..... 1 dram  
 Diluted sulphuric acid.... 2 drams  
 Water, enough to make... 8 ounces

Mix. Apply with a camel-hair brush and rinse carefully.

## MARBLE, REMOVING STAINS FROM.

**Cleaning Marble.**

Pure beeswax..... 5 drams  
 Japan gold size..... 1 dram  
 Oil of turpentine.....  $4\frac{1}{2}$  ounces

Mix. Apply with white flannel.

**Marble, to Remove Grease From.**

Apply a little pile of whiting or fuller's earth, saturated with benzene, and allow it to stand some time.

**Marble, to Clean.**

Mix with water 5 parts soda,  $2\frac{1}{2}$  parts powdered chalk,  $2\frac{1}{2}$  parts pumice stone (powdered). Wash the spots with this mixture; then wash off with soap and water.



**Marble, to Clean.**

Powdered chalk.....	1 ounce
Fuller's earth.....	1 ounce
Powdered pumice stone....	2 drams
Benzine .....	4 ounces
Chloroform .....	2 drams

Mix. Shake before using. Rub the spots well with this mixture by means of a piece of tannel. Then wash with soap and water.

**To Extract Oil From Marble or Stone.**

Soft soap, 1½ parts; fuller's earth, 3 parts; potash 1½ parts; boiling water to mix; apply to the grease spots and let it remain two or three hours.

**Marble, to Clean From Oil or Grease.**

Powdered castile soap....	1 ounce
Fuller's earth.....	3 ounces
Potassium carbonate.....	½ ounce

Mix. Moisten the powder with a little benzine to make a paste. Cover the stain with it and let remain 2 hours. Then wash it with water.

**Marble, to Remove Oil and Grease.**

Powdered castile soap....	½ ounce
Pumice stone, powdered... ½ ounce	
Precipitated chalk.....	3 ounces
Chloroform .....	1 ounce
Alcohol .....	3 ounces

Mix to make a stiff paste. Put in well stoppered bottles. Apply some of the paste to the spot and rub well with a soft cloth. Then wash with water and soap. Repeat the application if necessary.

**Marble, to Remove Oil Stains.**

Stains in marble caused by oil can be removed by applying common clay saturated with benzine. If the grease has remained long enough it will become acidulated, and may injure the polish, but the stain will be removed.

**Marble, to Remove Oil Stains.**

Boil ½ pound soft soap in 1 quart water, very slowly, until the water is reduced to 1 pint. Apply this in the same manner as the preceding.

**Cleaning Marble.**

Cover the soiled part with a paste of quick-lime moistened with a strong aqueous solution of sal soda for several hours; then remove the paste, wash the parts thoroughly and polish if necessary.

**Cleaning Marble.**

If the marble is white, coat it with gum arabic and expose to the sun. When it peels off wash with water or make a paste with fuller's earth and hot water, cover the spots therewith, let it dry on, and next day scour off with soft soap. The lustre can be restored by rubbing with a dry cloth.

**Cleaning Marble.**

Chlorinated lime.....	1 ounce
Chalk, powdered.....	4 ounces
Pumice stone, powdered... ½ ounce	

Mix. Make into a paste with diluted alcohol and spread on the marble, leaving it on 2 or 3 hours. Then rub with a soft cloth and wash with soap and water.

**To Take Stains From White Marble.**

Oil of turpentine, 2¼ teaspoonfuls; lye, 1½ gills; oxgall, 1½ ounces; pipeclay, quantity sufficient to make a paste. Apply the paste to the stain and let it remain for several

days. Iron mold or ink spots may be taken out by dissolving in 1½ pints rain water, 1½ ounces oxalic acid, ¾ ounce butter of antimony, stirred up with sufficient flour to make the mixture of the proper consistency. Put on with a brush, let it remain for a few days, wash off. Grease spots may be removed by applying common clay saturated with benzine.

**Marble, to Clean Old Marble.**

Powdered pumice stone...	1 ounce
Vinegar .....	4 ounces

Wash with this mixture and leave it on for some hours. Then brush hard and wash clean. Finally rub with whiting and leather.

**Marble, to Clean.**

Soft soap.....	4 ounces
Whiting .....	4 ounces
Sodium bicarbonate.....	1 ounce
Copper sulphate.....	2 ounces

Mix thoroughly and rub over the marble, leave it on 24 hours, then wash with soft brush and water.

**Marble, to Clean.**

Soft soap.....	¼ pound
Whiting .....	¼ pound
Sodium carbonate.....	1 ounce

Make into a paste. Rub over the marble and wash off after 24 hours.

**Marble, to Clean.**

Sodium carbonate.....	2 ounces
Chlorinated lime.....	1 ounce
Water .....	14 ounces

Mix well and apply to the marble with a cloth, rubbing well in and finally rubbing dry.

**Aniline Stains.**

Dissolve 7 parts sodium nitrate in 15 parts dilute sulphuric acid and 500 parts water; let stand 24 hours. Apply with a camel-hair brush, rinse thoroughly.

## REMOVING RUST AND FRUIT STAINS.

**Rust Stains.**

White cottons and linens.—Warm solution of oxalic acid and a very dilute muriatic acid.

Colored cottons and woollens.—Repeated washings with a solution of citric acid, if the color is fast.

Silks.—Treat like linens, using very dilute solutions; and putting layers of filter paper under the stain.

**Rust Stains.**

Instead of using oxalic acid, which attacks the fiber of the texture, rub on a mixture of two parts of cream of tartar and one of powdered alum.

**Rust Stains.**

A mixture of two parts of powdered cream of tartar with one part of powdered oxalic acid will remove stains from cotton and linen. This mixture is sometimes sold under the name of salts of lemon. The poisonous character of the acid must not be overlooked, for accidents have occurred from its careless use.

**Rust Stains on White Goods.**

Soak the stains in a solution of tin chloride and rinse immediately with much water. The tin salt is much more reliable in removing

iron rust, and quicker in its action than oxalic acid, unless the stains are soaked in a solution of the latter, contained in a tin dish, when the stains disappear in a shorter time.

#### Rust Stains on Clothing.

Treat the spot with a solution consisting of water, one fluid ounce; potassium ferrocyanide, one grain; dilute sulphuric acid, 8 minims; which will convert the iron into Prussian blue. Rinse with water, treat with a weak solution of potassa or soda to dissolve this compound and finally wash well with water.

#### Rust Stains on Clothing.

Moisten the spot with a solution of an alkaline sulphide, when it will turn black. After a few minutes rinse with water, and treat with a dilute solution of hydrochloric acid, and again rinse well with water. In the case of old stains it may be necessary to repeat the operation several times.

#### Rust Stains on Clothing.

Potassium binoxalate..... 1 dram  
Water ..... 5 ounces  
Glycerin ..... 5 drams

Mix and dissolve. Moisten with this solution, let lay 3 hours, rubbing frequently, then rinse with clean water.

#### Rust Stains on Clothing.

Potassium ferrocyanide....  $\frac{1}{2}$  ounce  
Sulphuric acid.....  $\frac{1}{2}$  ounce  
Water ..... 8 ounces

Mix and dissolve. Moisten the spot with this solution and wash with water.

#### Rust on Metals.

To remove rust from iron or steel utensils the following solution is applied by means of a brush, after having removed any grease by rubbing with a clean, dry cloth; 100 grams stannic chloride are dissolved in 1 liter of water; this solution is next added to one containing 2.5 grams tartaric acid dissolved in 1 liter of water, and, finally, adding 20 cubic centimeters indigo solution diluted with 2 liters of water. After allowing the solution to act upon the stain for a few seconds, it is rubbed clean with a moist cloth; to restore the polish, use is made of silver sand and jewelers' rouge.

#### Rust on Metals.

Rub slightly on with the finger a small quantity of the dry powdered magnesia, allowing it to remain for an hour or two, then brush off.

#### Rust on Metals.

Cover the metal with sweet oil well rubbed in and allow to stand 48 hours; smear with oil applied freely with a piece of cotton wool, after rubbing the steel. Then rub with finely powdered slaked lime.

#### Rust Polishing Paste.

Powdered pumice..... 3 ounces  
Olein ..... 2 ounces  
Suet .....  $1\frac{1}{2}$  drams  
Paraffin ..... 3 drams

Melt the fatty matters together and mix in the pumice, stirring till cold.

#### Rust Preventive.

Steel instruments can be protected against rust by putting a lump of fresh quicklime in the chest or drawer where they are kept. The lime will attract moisture and keep the air dry. It should be renewed, as soon as it becomes air-slaked.

#### Rust Preventive.

Paint the metal with caoutchouc oil and allow to dry.

#### Rust Preventive.

A solution of India rubber in benzine, painted on the metal is a good preventive. The solution should be made the consistency of a thin paste.

#### Rust Preventive.

Lard ..... 8 ounces  
Rosin, pure..... 1 ounce  
Benzine, enough.

Melt the lard and rosin, stir till nearly cold, mix in sufficient benzine to make it a soft paste. Rub a thin layer over the metal.

#### Rust Preventive.

Paraffin, or petrolatum, rubbed on the warmed metal, is one of the best rust preventives. The metal must be perfectly clean before applying.

#### Rust Preventive.

Tallow,  
Lead plaster, of each, equal parts.  
Melt together and rub on the metal.

#### Rust, to Remove.

To remove rust from small iron articles, dip in diluted sulphuric acid, then wash in hot lime water and dry in dry sawdust.

#### Rust, to Remove.

Dip the articles in kerosene and let them remain for some time. Then dry and polish with chalk.

#### Rust, to Remove.

Cover the rusted parts with olive oil, let it remain 3 hours, wipe off with a cloth. Dissolve 2 drams of caustic potash in 4 ounces soap liniment; rub on the mixture and let it remain for 10 minutes, then rub off with a dry cloth.

#### Rust, to Remove.

Emery powder..... 1 ounce  
Soft soap..... 2 ounces  
Mix and rub the rusted parts with it.

#### Rust, to Remove.

Whiting ..... 2 ounces  
Soft soap .....  $1\frac{1}{2}$  ounces  
Potassium cyanide..... 1 ounce  
Water ..... 12 ounces

Dissolve the soap in the water, add the cyanide, then, little by little, add the whiting. If too thick, add more water. This compound will remove rust from steel and give it a good polish.

#### Guns and Firearms, to Clean.

Put the barrel in clean water and clean with the brush attached to the washing rod; clean with tow; rub dry with cotton rags; clean with alcoholic solution of potash, to which a little emery flour has been added; finally rub with a rag moistened with oil.

#### Guns, to Clean.

A mixture of 1 ounce of benzine or oil of turpentine with 2 parts of machine oil is a good cleaning compound for guns.

#### Guns, to Remove Lead from the Barrel.

Close the lower end of the barrel with wax or a cork, pour a little mercury into it, close the other end, and let the mercury roll up and down for a short time. Then remove it and clean with an oil rag. The mercury forms an amalgam with the lead and removes every trace of it.

**Guns, Rusty, to Clean.**

Vaseline oil.....	4 ounces
Oil of turpentine.....	1 ounce
Benzine .....	1 ounce

**Mix.**

Pass oakum, saturated with this compound through the barrel repeatedly, then wash with weak solution of potash and then with water. Dry well with cotton.

**Guns, Lubricating Oil.**

Kerosene .....	2 ounces
Sperm oil.....	1 ounce
Oil of turpentine.....	1 ounce
Acetone .....	1 ounce

Mix. Oil of citronella or oil of bergamot may be added to mask the odor.

**Fruit Stains.**

Pour boiling water on chlorinated lime, in the proportion of 1 gallon to  $\frac{1}{4}$  pound; bottle, cork it well, and in using be careful not to stir it. Lay the stain in this for a moment, then apply white vinegar (acetic acid) and boil the table linen.

**Wine and Fruit Stains.**

White cotton or linen, fumes of burning sulphur, warm chlorine water.

Colored cotton or woollens, wash with tepid soapsuds or ammonia.

Silks, the same with very gentle rubbing.

**Tannin and Walnut Shell Stains.**

White cottons and linens.—Javelle water, warm chlorine water, concentrated solution of tartaric acid.

Colored goods or silks.—Chlorine water diluted according to the tissue and its color, each application to be followed by washing with water.

**Mildew, Wine or Fruit Stains on Silk or Linen.**

Cut 1 pound of ordinary good soap into shavings and boil into a stiff paste with rain water. Apply this to the stain and scatter upon it some finely powdered potash. Then spread the goods upon a grass plat and allow them to remain there for 24 hours. When dry sprinkle some rain water upon the stain and wash, when the stain will have disappeared.

**Fruit and Wine Stains.**

Rub the spot on both sides with hard soap and then lay on a thick mixture of starch and cold water. Rub well into the spot and expose to air and sun. If the stain has not disappeared in 4 days, repeat the process.

**Fruit and Wine Stains.**

Dip the stained parts in boiling milk until the stains disappear.

**Fruit and Wine Stains.**

Rinse in a weak solution of ammonia. If the stain does not yield, apply weak chlorine water, alternating with the solution of ammonia.

**Fruit and Wine Stains.**

Moisten with dilute sulphuric acid and then rub with an aqueous solution of sodium hypsulphite.

**Mildew, to Remove.**

Moisten some aluminum hypochlorite with water and rub well into the cloth, moisten with diluted sulphuric acid (1:20) and in  $\frac{1}{2}$  hour rinse in soft water. Then rinse with water containing 1 ounce of sodium hypsulphite to the gallon.

**Mildew, to Remove.**

Soak the goods for 24 hours in sour milk or buttermilk, then rinse in water and wash in soapsuds.

**Mildew, to Remove.**

Moisten with very diluted Javelle water, and then wash in soapsuds.

**Mildew, to Remove.**

For linen: One ounce of soft soap and the juice of a lemon.

Put on both sides of the spot and let the mixture remain for 24 hours.

**Mildew, to Remove.**

Mildew is the hardest of all stains to remove, and cannot be taken out of linen unless the effort is made soon after it appears. A very fresh, light stain may be treated successfully by covering it with table salt wet with lemon juice, and placing it on the grass in the sun. But the best remedy is the following: Mix soft soap with powdered starch, half as much table salt, and the juice of a lemon. Spread this mixture thickly on both sides of the mildewed linen, and then lay the fabric on the grass in the sun. Repeat the operation two or three times a day, leaving the cloth out over night as is done in bleaching. If this will not remove the stain nothing will do it.

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**CLEANING THE HANDS.**

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**How a Druggist Should Cleanse His Hands.**

When the hands have been stained by strong alkaline solutions, they should be washed in some dilute acid—citric, oxalic or acetic (1 to 100 of water). If soap without water is then immediately applied, fatty acids are deposited in the skin, which thus becomes liable to crack. The effects of lime solutions and also of strong ammonia may be prevented in the same way. After using mineral acids, the hands should be washed with water and rubbed while wet with a piece of soap. If the acid was very strong or has affected a large surface, they should be bathed, after washing, in a weak solution of soda (1 to 100). Strong sulphuric acid is first to be washed off, as far as possible, with plenty of water, after which soap should be employed as above directed. If water is used abundantly there is no danger of too much heat being evolved. When the acid has caused severe burns, the affected parts may be covered with a paste composed of magnesia, carbonate of magnesium, or bicarbonate of sodium, with a little water. Nitric acid is removed by the same process. Burns by this acid, especially when treated with alkaline agents, are apt to leave behind a yellowness of the affected integument. Nitric acid destroys the epidermis so quickly that it can hardly ever be restored to a normal condition, and the same is the case with the fumes, also with those of nitro-muriatic acid, bromine and chlorine. Iodine stains should be treated with a solution of thiosulphate (1 to 10 of water). When the hands have been exposed for a long time to the action of carbolic acid, wash them first with alcohol—which may be used several times over for this purpose—and then with soap; after which, without being dried, they may be rubbed with lanolin. After working with sublimate solutions, it is best to bathe the hands for some time in a solution of common salt (1 to 50 of water); followed by soap and lanolin.



**To Clean the Hands.**

Rub them with a slice of lemon, or, still better, add a little oxalic acid to the lemon juice. The hands should be first washed with soap and water, and well rinsed; then the substances mentioned above should be well rubbed in, and the hands washed in soft water without soap.

## CLEANING PAINTINGS, ENGRAVINGS, GLASS, ETC.

**Engravings, to Clean.**

Expose them to the fumes of muriatic acid and wash well in water. To take out ink spots use hydrochloric acid, which dilute with water as soon as the action appears to be sufficient. Dry with blotting paper, wash and dry once more. A bath in water, in which a little potassa has been stirred, will finish the process, neutralizing any of the acid that may remain.

**Engravings, to Clean.**

Chlorinated lime.....  $\frac{1}{2}$  ounce  
Water, enough to make... 2 quarts

Mix and let stand 24 hours, stirring often; decant and add water to make 2 quarts. Dip the engraving in this solution, and pass afterwards through clean water.

**Engravings, to Clean.**

A weak solution of hydrogen of peroxide might be used instead of the chlorinated lime solution directed in the preceding formula.

**Paintings, to Clean.**

Dissolve a little common washing soda in wine, add a grated potato and a little salt; rub this well over the painting until clean. Wash off in spring water and dry with a clean cloth.

**Old Paintings, to Revive.**

Take the painting out of the frame, put a cloth moistened with rain water on it and leave it for a while to take up the dirt from the picture. Several applications may be required. Then wipe the picture very gently with a tuft of cotton damped with pure linseed oil. Valuable paintings should be taken to an expert for reviving.

**Paintings, Gold Frames.**

Gold frames may be cleaned with a freshly cut onion. After 2 hours wipe with a soft sponge wetted with rain water. Then wipe dry with a soft rag.

**Window Polishing Paste.**

Prepared chalk..... 90 parts  
White bole..... 5 parts  
Armenian bole..... 5 parts  
Rub together into a paste with  
Water ..... 50 parts  
Alcohol ..... 25 parts

The paste is to be rubbed on the window, allowed to dry, and then rubbed off with cloths.

**Cleaning Powder for Windows.**

Moisten calcined magnesia with pure benzene sufficiently to let a drop form when pressed. A little of the mixture is placed on a wad of cotton and applied to the glass plate. It may also be used in cleaning mirrors. Do not use near a fire or light, as the benzene vapors are very inflammable and explosive.

**Window Polishing Paste.**

Castile soap..... 2 ounces  
Boiling water..... 3 ounces  
Precipitated chalk..... 4 ounces  
French chalk..... 3 ounces  
Tripoli ..... 2 ounces

Dissolve the soap in the boiling water, add the other ingredients, mix well and reduce with water to the proper consistency.

**Window Polishing Paste.**

Olive oil..... 1 ounce  
Ammonia water..... 1 ounce  
Lime ..... 2 ounces  
Water ..... 1 ounce

Mix to form a thick paste.

**Windows, to Remove Paint and Putty.**

A hot saturated solution of saleratus in water is put on the stains. When nearly dry rub off with a woollen cloth.

**Greasy Bottles.**

Wash with benzine or a solution of potassium permanganate to which has been added some concentrated hydrochloric acid. The disengaged chlorine destroys the fatty matter. Bottles that have contained resinous substances are washed with potassa or soda, and rinsed with alcohol, while those having contained essences are washed first with sulphuric acid, then with water.

**Bottles, to Remove Turpentine, Petroleum, etc.**

Pour a little strong sulphuric acid in the bottle, cork and let the acid touch every part of the bottle. Afterwards wash repeatedly with clean water.

**Bottles, Oily.**

Put some clean sawdust in the bottle, add some benzene and shake well. Then add hot water and rinse repeatedly with hot water.

**Bottles, to Clean.**

Equal parts of powdered potassium dichromate and sulphuric acid are put in the bottle. Shake until all the particles become black, then rinse out with water.

**Eye-glasses, to Clean.**

The best cleaning agent for eye-glasses is soft chamois skin, perfectly dry and clean.

**Lenses of Microscopes, to Clean.**

For cleaning use well washed linen or Japanese lens paper. All powders and liquids should be avoided.

**Eye-glasses, Moisture Proof Covering.**

A very thin coating of vaseline or white oil will prevent the deposit of moisture on eye-glasses.

**To Clean the Globes on Gas Fixtures.**

If the globes on a gas fixture are much stained on the outside by smoke, soak them in tolerably hot water, in which a little washing soda has been dissolved. Then put a teaspoonful of powdered ammonia in a pan of lukewarm water, and with a hard brush scrub the globes until the smoke stains disappear. Rinse in clean cold water. They will be as white as if new.

**Cleaning Cut Glass.**

Treat the same way as in cleaning globes on gas fixtures, using a soft brush.

**Cleaning Glassware.**

Many glass bottles are thrown away which might be easily cleaned by filling them with a solution of potassium dichromate and sulphuric acid in about the proportions given for battery fluid in the National Formulary. It would be well to keep a solution on hand, which can be used repeatedly. The bottles to be cleaned should be filled with the solution or immersed in it for a short time, when on rinsing they will be perfectly clean.

**Cleaning Cover Glasses.**

Place your cover glasses, immediately after use, into concentrated sulphuric acid. When a sufficient quantity has been collected together, add some more of the acid, and warm for some time. Then pour off the acid, wash well with water, next with absolute alcohol, and lastly with ether.

**Cleaning Cover Glasses.**

Dissolve a pinch of chromic acid in about 1 dram of water in a wide, flat-bottomed vessel, add 2 fluid ounces of sulphuric acid, and place the cover glasses, each separately, into the liquid. After an hour pour off the liquid, wash the glasses several times with water, and then cover them with a mixture of 1 volume of hydrochloric acid and 3 volumes of alcohol, and lastly with perfectly pure ether, dried by means of calcium chloride. Lastly, the glasses are placed on a sheet of smooth white paper spread out by means of a small glass rod, and as soon as dry (after about five minutes) transferred into a box.

## CLEANING BRASS, SILVER, OILCLOTH, ETC.

**Putz-Rags.**

Four parts of castile soap are dissolved in 20 parts of water; the solution mixed with 3 parts of tripoli, and tinted with fuchsin or coralline. Woolen rags are now dipped in the mixture, which must be stirred continuously, the excess of the mixture wrung out, and the rags dried. The tripoli must be in an impalpable powder.

**Belgian Putz Powder.**

Chalk .....	250 parts
White bole.....	100 parts
Lead carbonate.....	125 parts
Magnesia .....	20 parts
Iron oxide.....	20 parts

The mixture must be absolutely free from gritty particles. For cleaning gold, silver and other metals.

**Cleaning and Polishing Brass.**

Oleic acid seems to have a peculiar solvent action upon oxides, etc., and yet leaves the metallic surface intact, and when combined with finely powdered Venetian red and cleaning fluids, leaves nothing to be desired. The following is recommended:

Venetian red, finely powdered .....	3 ounces
Oil of turpentine.....	12 fl. ounces
Oleic acid.....	1 fl. ounce
Ammonia water.....	½ fl. ounce
Alcohol .....	1 fl. ounce
Oil of saffras.....	10 minims

Mix; shake on using. Apply with a rag, and clean off when dry with whiting or precipitated chalk.

**Brass or Copper, to Clean.**

Mix together one ounce oxalic acid, 6 ounces rotten stone and ½ ounce gum arabic pounded finely. Add 1 ounce sweet oil and sufficient water to form a paste. Apply and rub dry with flannel or wash leather.

**Brass Polishing Paste.**

Oxalic acid.....	1 ounce
Rotten stone.....	2 ounces
Sweet oil.....	1½ ounces
Oil of turpentine, enough to make a paste.	

**Brass and Copper, to Polish.**

Potassium dichromate.....	1 ounce
Sulphuric acid.....	1 ounce
Water .....	2 ounces

Mix and dissolve. After washing with this solution, use a polishing paste.

**Brass and Copper, to Clean.**

For small articles the following is by far the best method:

Prepare in a stone jar a mixture of one part of nitric acid and ½ part of sulphuric acid. Have also ready a pail of clean water and a box with sawdust. Dip the article in the acids, then in the water and rub dry with the sawdust.

**Brass and Copper Cleaning.**

Rub the surface with rotten stone and sweet oil, then rub off with a piece of cotton flannel and polish with soft leather.

**Brass and Copper Cleaning.**

Oxalic acid, powdered,  
Whiting, of each, equal parts.

Mix. Apply wet with a brush. When dry, rub off with a soft brush and polish with whiting.

**Brass and Copper Cleaning Powder.**

Chalk .....	10 ounces
White bole.....	4 ounces
Magnesium carbonate.....	1 ounce
Iron oxide.....	1 part

Mix well. Brush on with a soft brush and polish with leather.

**Brass and Copper Paste.**

Oxalic acid.....	1 dram
Rotten stone.....	4 ounces
Boiling water.....	1 ounce
Oil of turpentine.....	½ dram
Soft soap.....	½ ounce
Sweet oil.....	5 drams

Dissolve the acid in the water, add the other ingredients and beat into a paste.

**Brass and Copper Cleaner.**

Oxalic acid.....	5 ounces
Water .....	6 ounces
Kieselguhr .....	7 drams

Dissolve the acid in the water and mix with the kieselguhr. Shake before using.

**Brass and Copper Polisher.**

Cream of tartar.....	5 ounces
Alum .....	10 ounces
Sodium chloride.....	10 ounces
Water .....	6 pints

Dissolve, let stand for a few days and pour off the clear liquid, or filter.

**Brass and Copper Polisher.**

Tartaric acid.....	1 ounce
Water .....	10 ounces
Ferric oxide.....	6 drams

Dissolve and mix. Shake before using.

**Brass and Copper Polisher.**

Stronger ammonia water.. 1 pound  
 Water ..... 2 pints  
 Prepared chalk..... 4 ounces  
 Red or yellow aniline, to color.

Mix. Shake before using.

**Brass and Copper Polisher.**

Tripoli ..... 1 pound  
 Whiting ..... 1 pound  
 Rotten stone.....  $\frac{1}{2}$  pound  
 Petroleum ..... 2 ounces  
 Petrolatum, enough to make a soft paste.

Mix.

**Tarnished Gold.**

In 16 ounces of water mix 2 ounces of sodium bicarbonate, 1 ounce of chlorinated lime, 1 ounce of common salt. Apply with a soft brush, using the solution either cold or slightly warm.

**Tarnished Gold.**

Chalk ..... 18 ounces  
 Talc ..... 5 ounces  
 Silica ..... 2 ounces  
 Alumina ..... 5 ounces  
 Magnesium carbonate..... 2 ounces  
 Jewelers red..... 2 ounces

Mix. Apply with a soft brush.

**Cleaning Silver.**

Alum, powdered..... 3 drams  
 Common salt..... 8 ounces  
 Soft soap..... 4 ounces  
 Water ..... 40 ounces

Dissolve the salt and the alum in the water, then the soft soap and remove the scum.

**Cleaning Silver.**

Prepared chalk..... 8 ounces  
 Oil of turpentine..... 2 ounces  
 Alcohol ..... 8 drams  
 Spirit of camphor..... 4 drams  
 Stronger ammonia water.. 2 drams

Mix. Apply with a soft sponge and allow to dry before brushing off.

**For Cleaning Silver.**

Rub the articles with salt, using a small sponge, piece of flannel, or chamois. Then polish with a little prepared chalk made into a thick paste with water to which a few drops of ammonia water or alcohol have been added, this paste to be brushed or rubbed over the article.

**Cleaning Silver.**

Precipitated chalk..... 4 ounces  
 Alcohol ..... 12 ounces  
 Ammonia water.....  $\frac{1}{2}$  ounce

Mix. Shake before using. Rub on the silver and allow to dry. Then polish with a soft cloth.

**Cleaning Silver.**

Silver blackened by sulphuretted hydrogen is best cleaned by rubbing with a hot solution of borax.

**Cleaning Silver.**

Ammonium carbonate..... 1 ounce  
 Water ..... 4 ounces  
 Talcum ..... 16 ounces

Powder and mix well. Apply by means of soft leather.

**Silver Cleaning.**

Whiting ..... 2 ounces  
 Tin oxide..... 1 ounce  
 Ammonium carbonate..... 1 ounce

Powder fine and mix well. Apply with soft leather.

**Silver, to Remove Ink Stains.**

Ink stains can be removed from silver by the use of Javelle water, polishing afterwards with chalk.

**Cleaning Silver.**

Potassium cyanide..... 8 ounces  
 Alcohol ..... 1 ounce  
 Ammonia water..... 1 ounce  
 Blue vitriol.....  $\frac{1}{2}$  ounce  
 Sodium sulphate..... 1 ounce  
 Soft water..... 2 gallons

Mix and dissolve. Immerse the silverware in the bath for a few minutes, rinse in clean water and polish with chamois.

**Cleaning Silver.**

Whiting, in fine powder.. 2 ounces  
 Stronger ammonia water.. 1 ounce  
 Water, enough to make... 8 ounces

Mix. Shake before using.

**Silver, to Prevent Tarnish.**

If silverware is to be stored for a long time, a thin coating of collodion will prevent tarnish. The collodion should be diluted with alcohol and applied with a brush.

**Cleaning Silver.**

Vaseline ..... 4 ounces  
 Precipitated chalk..... 8 ounces  
 Ammonium carbonate..... 1 ounce  
 Cuttlefish bone..... 1 ounce

Powder very fine and make a pomade of the consistency of butter.

**Oilcloths, to Furbish.**

Dissolve  $\frac{2}{3}$  pounds paraffin in 1 gallon oil of turpentine by the aid of a gentle heat, and apply with a sponge or piece of flannel, while warm. Let it remain on the oil cloth 24 hours; then polish with flannel. This solution not only renovates but preserves the cloth.

**Matting and Oilcloth, to Brighten.**

Wash it twice during the summer with salt and water, say about a pint of salt, dissolved in half a pailful of warm, soft water, drying the matting quickly with a soft cloth. The salt will prevent it from turning yellow. Another plan is, after the oilcloth is scrubbed and dried, to rub it all over with a cloth dipped in milk. This will bring the colors out very bright.

**To Keep Linoleum Bright.**

Wash with equal quantities of milk and water. Once in several months a little linseed oil or a weak solution of beeswax in spirit of turpentine may be used.

**Linoleum Polish.**

White ceresine..... 1 ounce  
 Hard paraffin ..... 2 ounces  
 Oil of turpentine..... 4 ounces  
 Benzine ..... 1 ounce

Mix.

**Linoleum Polish.**

Yellow ceresine..... 4 ounces  
 Hard paraffin.....  $2\frac{1}{2}$  ounces  
 Boiled linseed oil.....  $1\frac{1}{2}$  ounces  
 Oil of turpentine..... 16 ounces  
 Oil-soluble cerotin orange  $\frac{1}{2}$  dram

Mix.

**Oilcloth and Linoleum.**

Palm oil..... 1 ounce  
 Paraffin, liquid..... 18 ounces  
 Kerosene ..... 4 ounces

Mix. Apply with a cloth after scrubbing the floor and drying.



**Oilcloth and Linoleum.**

Yellow wax.....	3 ounces
Oil of turpentine.....	10 ounces
Benzine .....	5 ounces

Dissolve the wax in the oil of turpentine by gentle heat and add the benzine.

**Oilcloth and Linoleum.**

Yellow wax.....	4 ounces
Boiled linseed oil.....	10 ounces
Oil of turpentine.....	10 ounces

Melt the wax and the linseed oil and mix with the oil of turpentine.

**Stains on Varnished Paints.**

When the varnish is hard enough polish with water and tripoli, very finely ground, or with a great deal of water and rotten stone. Then rub with a very fine rag, dipped in sweet oil. Complete by drying with clean rag.

**Paint Stains on Clothes.**

If the paint is fresh use oil of turpentine or alcohol. Chloroform will remove dry white paint, which has resisted the action of ether, benzole and carbon disulphide.

**Paint Spots on Cloth.**

For taking out spots caused by oil colors or varnish, which often resist the employment of strong alkalies: An emulsion made by shaking together 2 parts of spirit of ammonia and 1 part of oil of turpentine. Apply to the stain and in a few minutes both can be wiped off together.

**Paint Stains.**

Absolute alcohol.....	3 ounces
Strong liquid ammonia.....	1½ ounces
Benzole .....	1 dram

Mix. Apply with flannel or sponge.

**Paint Stains.**

Old hard paint stains should be covered for some time with olive oil. Then soak off the olive oil with blotting paper and clean with chloroform.

**Paint Stains.**

Ammonia water.....	4 ounces
Oil of turpentine.....	2 ounces

Put in an 8 ounce bottle and shake until an emulsion forms. Moisten a rag with the mixture and rub the spot well.

**Paint and Varnish, to Remove.**

Palmitic acid.....	5 ounces
Benzine .....	7 ounces
Amyl acetate.....	8 ounces

Mix and dissolve. Apply with a brush and rub with a cloth.

**Paint and Varnish, to Remove From****Woodwork.**

Apply Javelle water by means of a brush. Repeat if necessary and rub with a cloth.

**To Remove Paint and Varnish From****Woodwork.**

Borax .....	1 ounce
Soap .....	1 pound
Water .....	3 pounds

Cut the soap in small pieces and dissolve in the water, heat to boiling and add the borax. Use with a piece of old flannel.

**To Remove the Smell of Paint.**

Plenty of sunshine and currents of fresh air will remove the odor of paint quicker than anything else.

**To Remove the Smell of Paint.**

First render the room as nearly as possible air-tight by closing the windows, doors and other openings. Place a vessel of lighted charcoal in the room, and throw on it two or three handfuls of juniper berries. After twenty-four hours the smell will have entirely disappeared. Another method is to plunge a handful of new hay into a pail of water and let it stand in the newly-painted room.

**CLEANING,  
MISCELLANEOUS.****To Clean Alabaster.**

Soap and water with a little ammonia water will restore the lustre of alabaster. Rinse in clean water after washing and dry with a soft towel.

**To Clean Aluminium.**

Fine emery.....	1 ounce
Tallow .....	4 ounces
Oil of turpentine.....	2 ounces

Melt the tallow and mix with the oil of turpentine and emery. Apply with polishing brushes.

**To Clean Balances and Fine Instruments.**

Oleic acid.....	1 ounce
Ammonia water.....	1 ounce
Alcohol .....	1 ounce

Mix and filter. Rub with a cloth and polish with tripoli.

**To Clean Barrels.**

Put a few pounds of unslaked lime in the barrel, add water, and cover. In a short time add more water, and roll the barrel. Rinse with clean water.

**To Clean Mouldy and Unclean Barrels.**

First rinse them with water containing soda, then filling them with water slightly acidulated with hydrochloric acid, allowing them to stand two days, emptying them, and finally rinsing with clean water.

**Blackboards, to Remove Grease From.**

Make a strong lye of pearlsh and soft water, and add as much unslaked lime as lye will take up. Stir and let it settle, then bottle and stopper close. Dilute with water when used and scour the part with it. The solution must not be allowed to remain long, as it will draw the color from the board.

**To Clean Blankets.**

Borax .....	2 ounces
Soft soap.....	1 pound
Water .....	1 tubful

Dissolve the borax and soap. Put the blanket in the solution and let remain overnight. Next day rub, drain, and rinse the blanket twice in clean water and hang up to dry. Do not wring.

**Blood Stains.**

A fresh blood stain can best be removed by covering it with a layer of starch mixed as if for the laundry, and laid on quite wet.

**Blood Stains.**

Apply a weak solution of soda and then a solution of alum. Rinse in warm water.

**Books, to Clean.**

Dust on books can best be removed by using bread crumbs.

**Books, Finger Marks On.**

Apply a jelly of castile soap with a brush and rinse in clean water.

**Books, Grease Spots On.**

Put blotting paper over the spot covered with talc and apply a hot iron.

**Books, to Remove Grease Spots.**

Apply benzine, putting blotting paper over and under the spot.

**Books, to Remove Ink Stains.**

Put blotting paper under the stain and apply a weak solution of oxalic acid, followed by weak Javelle water. Wash well.

**Books, to Remove Marking (Indelible) Ink.**

Use blotting paper, paint the stain first with tincture of iodine, then with a weak solution of potassium cyanide.

**Brushes, to Clean.**

Dissolve  $\frac{1}{2}$  ounce of washing soda in 2 quarts of hot water. Comb the hair out of the brush and put it bristles downwards in the solution, leave in a minute and dip in clear water. Repeat till clean. Do not let the liquid touch the polish on the wood. Finally dry the brush in the sun.

**Cane Seat Chairs, to Clean.**

Clean the seats with a solution of oxalic acid, washing with clean water afterwards.

**Canvas, to Render Mildew Proof.**

Soap .....  $\frac{1}{4}$  pound  
Alum .....  $\frac{1}{2}$  pound

Dissolve the soap in a gallon of water and the alum in another gallon. Dip the canvas in the soap solution, wring out and put it for 12 hours in the alum solution. Hang up to dry.

**Carpets and Floors.**

Sprinkle a handful of salt on the carpet and sweep with a stiff broom. The salt will prevent the rising of dust.

**Carpets and Floors, to Sweep.**

Sprinkle on the carpet or floor a liberal amount of tea leaves, then sweep. The leaves will attract the dust. Use only soft brooms.

**Vacuum Cleaning for Carpets and Floors.**

Vacuum cleaning has become popular lately and has some advantages over the old methods. It raises no dust and does not scatter dust over other furniture. But it removes only the loose dust and leaves stains undisturbed. The latter should therefore first be removed by ordinary methods, before the vacuum cleaning is applied. Small vacuum cleaners, worked by hand, can now be procured everywhere.

**Dry Cleaning of Floors and Carpets.**

Besides the vacuum cleaning there are other methods of dry cleaning. They all require special machinery and methods and considerable technical skill.

**Sweeping Powder.**

Dry sawdust..... 10 pounds  
Liquid petrolatum..... 2 pounds  
Paraffin ..... 2 ounces  
Salt, coarse.....  $\frac{1}{2}$  pound  
Oil of eucalyptus..... 2 ounces

Melt the paraffin and mix with the liquids. Mix the salt and sawdust and incorporate the liquids.

**Sweeping Powders.**

Lately the use of various sweeping powders has become popular in many places. The object of these powders is to lay the dust and to restore the color and lustre of carpets and floors. At the same time they contain antiseptics and act as insecticides. The following are some of the general formulas:

**Sweeping Powder.**

Dry sawdust..... 10 pounds  
Paraffin oil..... 2 pounds  
Creolin ..... 2 ounces

Mix the sawdust intimately with the liquids and sprinkle on the floor before sweeping.

**Sweeping Powder.**

Sawdust ..... 10 pounds  
Liquid petrolatum..... 2 pounds  
Sea sand..... 4 pounds  
Oil of mirbane..... 1 ounce  
Oil of eucalyptus..... 1 ounce

Mix thoroughly.

**Dust Layers for Roads.**

As the oil in the sweeping powders attracts the dust and keeps it from rising, the same principle is applied to roads, by sprinkling them with oil. Petroleum oils or crude kerosene are generally used and sprinkled on the roads or streets by means of sprinkling cars. This method is very effective as far as the dust is concerned, but the oil is apt to make asphalt pavement slippery and dangerous for horses.

**Celluloid Collars and Cuffs, to Clean.**

Wash with a weak solution of saleratus and polish with a little chalk and a clean woolen rag.

**Chamois Skins, to Clean.**

Soak in a weak solution of washing soda, then in weak soapsuds for a few hours. Rinse thoroughly in water and dry.

**Coffee, Tea and Milk Stains.**

Glycerin ..... 1 ounce  
Water ..... 9 ounces  
Ammonia water.....  $\frac{1}{2}$  ounce

Mix. Apply by means of a brush several times for 12 hours, then rinse in clear water, dry between blotting paper.

**Coffee, Tea and Milk Stains.**

If coffee or tea is spilled on a dress, do not apply soap. Spread the stained material over a dish and pour hot water over it. If this does not remove the stain, sprinkle a little borax on the stain, leave it on for 10 minutes and pour hot water over it.

**Coins and Medals, to Clean.**

Dip in strong nitric acid for a few minutes, then in clean water. Polish with chalk.

**Coins and Medals, to Clean.**

Put the stained coins in lemon juice for 24 hours. Then wash in clean water and polish with chalk.

**Feathers and Birds, to Clean.**

To clean feathers from dirt, wash them in hot water and soap. Rinse them in hot water and hang up to dry. If they are oily, add a pound of lime to a gallon of water, pour off the clear liquid, dip the feathers in it and rinse with hot water.

**Felt Hats, to Clean.**

Clean with ammonia water and water. If greasy, wash with fuller's earth. Size with liquid glue.

**Felt Hats, to Clean.**

Stains of grease and paint may be removed by oil of turpentine or benzine, washing afterwards with alcohol.

**To Clean Furs.**

For dark furs: Warm a quantity of new bran in a pan, taking care that it does not burn, to prevent which it must be briskly stirred. When well warmed rub it thoroughly into the fur with the hand. Repeat this two or three times, then shake the fur, and give it another sharp brushing until free from dust.

For white furs: Lay them on a table and rub well with bran made moist with warm water, rub until quite dry, and afterwards with dry bran. The wet bran should be put on with flannel, then dry with book muslin. Light furs in addition to the above, should be well rubbed with magnesia or a piece of book muslin, after the bran process, against the way of the fur.

**To Clean Furs.**

Equal parts of flour and salt, heated in an oven, rubbed in the fur. Shake well afterwards to remove the powder.

**To Clean Furs.**

Make a thin paste of magnesia carbonate and benzine. Cover the fur with this paste, hang it in the open air to dry, then shake and brush.

**Ivory, Horn, Bone, to Clean.**

Expose for 3 or 4 days to the action of sunlight, then bathe in oil of turpentine.

**Ivory, Horn, Bone, to Clean.**

Dip for half an hour in a solution of potassium permanganate (1:250) and follow by dipping for the same length of time in a solution of oxalic acid (1:100). Then rinse well with water and repeat several times.

**Ivory, Horn, Bone, to Clean.**

A very dilute solution of sulphuric acid will restore the white color.

**To Clean Lamp Burners.**

Take a piece of sal soda the size of a walnut, put into a quart of soft water, put the lamp burner in it (an old tomato can is good enough), set it on the stove; after boiling for five minutes remove the burner, and when put back on the lamp it will be as good as new. All the carbon on the old burners should be removed once every month.

**Polishing Cloths.**

Under this name is usually given a cloth saturated with soap and polishing powder, so that it cleans and polishes any metal surface upon which the cloth is rubbed. The following is the usual formula: Dissolve 8 ounces of soap in 40 ounces of water, and stir in 4 ounces of polishing powder, which may be powdered pumice stone, tripoli, finely powdered emery, or any other abrasive suitable for the work to be performed. Tripoli or fine diatomaceous earth is to be preferred. With the pasty mass thus produced, thoroughly saturate unbleached muslin and dry it. The cloth is then cut in pieces, 4 to 6 inches square, and applied by rubbing the article to be polished until bright. The appearance of the cloth is improved by coloring it red, which may be easily done with a little aniline dye.

**Polishing Cloths.**

Dissolve 1 ounce of oxalic acid in a gallon of water, and sift into the solution 1 pound

of whiting. Saturate a piece of cotton flannel, of the desired size, in the liquid, which is to be kept well stirred, wring out the cloth somewhat and allow it to dry. Then smooth out the cloth, fold and insert it in an envelope.

**Polishing Cloths.**

Sometimes two kinds of cloth are used in conjunction. The first is impregnated with a mixture of flour of emery, 1 part, soap, 2 parts, and water, 10 parts; the second with a mixture of tripoli or jewelers rouge, 1 part, soap, 2 parts, and water, 10 parts. The first cloth is used as a scourer to remove the oxidized surface, while the second cloth is the scourer proper.

**Metal Polishing Cloths.**

The cloths employed are heavy, double-faced cotton cut into pieces 9 inches square. The cloths are soaked in hot water and wrung out as dry as possible, and then immersed in the following solution:

Oleic acid.....	4 ounces
Ammonia .....	4 ounces
Water .....	1 gallon

The solution is employed hot, and after the cloths are well impregnated they are passed through a wringer, smoothed out, and sprinkled with either fine emery, tripoli, or kieselguhr; emery is used with dark cloths. The powder is well rubbed into the material, which is then dried, and finally loose powder is removed by brushing with a soft brush.

**Polishing Cloth.**

Jewelers rouge.....	1 part
Castile soap.....	2 parts
Water, sufficient to dissolve.	

Dissolve the soap in the water and thoroughly mix in the powder; soak the cloths in square pieces in the solution, wring out, and dry.

**Polishing Cloth.**

Castile soap.....	3½ ounces
Water .....	14 ounces
Tripoli .....	3 ounces

Dissolve the soap in the water, add the tripoli, stir well and dip woolen cloth of convenient size in the mixture. Hang up to dry.

**Cleaning Cloths.**

Soap .....	4 ounces
Water .....	20 ounces
Pumice stone, powdered...	2 ounces

Mix as directed in the preceding formula.

**Cleaning Cloths.**

Soap .....	3 ounces
Water .....	1 pint
Emery, very fine.....	2 ounces

Prepare as directed in the preceding formula.

**Cleaning Cloths.**

Soap .....	2 ounces
Water .....	20 ounces
Infusorial earth.....	4 ounces

Prepare as in the preceding.

**Dusting Cloth.**

Paraffin oil.....	1 ounce
Benzine .....	2 pints
Oil of eucalyptus.....	1 dram

Mix. Dip soft woolen cloths of convenient size into the solution and hang up to let the benzine evaporate.



**Dusting Cloth.**

Vaseline, white.....	½ ounce
Oil of turpentine.....	½ ounce
Benzine .....	2 pints
Thymol .....	½ dram

Mix and dissolve. Prepare as directed in the preceding formula.

**Show Cases, to Polish.**

Precipitated chalk.....	1 ounce
Burnt alum, finely powdered .....	5 ounces

Mix. Apply with alcohol by means of a soft rag.

**Straw Hats, to Clean and Bleach.**

A sponge is moistened with a solution consisting of 10 parts sodium thiosulphate, 5 parts glycerin, 10 parts alcohol and 75 parts water. The hat is then well sponged with this solution, then put into a dark, cool place for a day and then is once more thoroughly gone over with a sponge soaked with a solution containing 10 parts alcohol, 2 parts citric acid and 90 parts water. After again allowing to remain for some time in a cool place, the hat is ironed.

**Straw Hats, to Bleach.**

Sponge with a weak solution of Javelle water, rinse with water and dry.

**Straw Hats, to Bleach.**

Clean the hat well with soap and water and dry. Put it in a box or old trunk. Introduce a lighted sulphur candle and when the box is filled with sulphurous acid fumes, close it. Do not open till the next day.

**Straw Hats, to Clean.**

Sodium bisulphite.....	10 drams
Tartaric acid.....	2 drams
Borax .....	10 drams

Mix. Moisten a small quantity of the powder and apply it with a toothbrush.

**Straw Hats, to Clean.**

Oxalic acid.....	1 part
Cream of tartar.....	5 parts

Powder fine, and use as directed in the preceding formula.

**Straw Hat Cleaner.**

Potassium binoxalate.....	10 parts
Borax .....	1 part

Mix, and use like the preceding.

**Straw Hats, to Stiffen, Waterproof.**

Copal .....	5 ounces
Sandarac .....	1 ounce
Venice turpentine.....	½ ounce
Castor oil.....	½ dram
Alcohol .....	10 ounces

Mix and dissolve. Apply with brush.

**Straw Hats, to Stiffen.**

Shellac .....	4 ounces
Sandarac .....	1 ounce
Venice turpentine.....	3 drams
Castor oil.....	1½ drams
Alcohol .....	1 pint

Mix and dissolve.

**Straw Hats, to Stiffen.**

Shellac .....	4 ounces
Rosin .....	1 ounce
Venice turpentine.....	1 ounce
Castor oil.....	1½ drams
Alcohol .....	1 pint

Mix and dissolve.

**Straw Hats, to Stiffen.**

Mucilage of acacia, 1 part, mixed with 3 parts of water, applied by a brush.

**Straw Hat Bleach.**

Sodium bisulphite.....	10 ounces
Tartaric acid.....	2 ounces
Borax .....	10 ounces

Mix. Directions for use: Moisten a small quantity of the powder and apply this with a wetted brush to the hat. This powder may be put up in boxes or envelopes for retailing.

Bleaching is also done with perborates and a contemporary recommends the following method:

1. Remove the dirt, soap the hat with a brush, and rinse in lukewarm water.

2. Prepare a bleach bath by adding one ounce sodium perborate to every gallon of lukewarm water, and keep the hats in the solution for 24 hours or more, taking care that the straw is completely covered by the liquid; if any part is uncovered, that part will turn brown and the stain can never be removed. Occasional stirring is of advantage. Heating up the bath to about 130° F. at the end of the bleach will make use of the full efficiency of the bleaching agent.

3. When taken from the bleach bath, dip the hats for a minute in a weak oxalic acid solution (1 ounce to a gallon); afterward rinse thoroughly in pure water, and dry.

Enamelware is preferable for the bleach bath. If such is not at hand, a wooden pail or earthen pot will do. Sodium perborate, when dissolved in water, produces a weak alkaline borax and hydrogen peroxide solution. Such solution will commence with the bleaching action as soon as in contact with the fibre, and does not require any neutralizer or starter.

**Straw Hat Varnish.**

Shellac, bleached.....	3½ ounces
Borax .....	2 ounces
Water .....	1½ pints
Glycerin .....	4 ounces
Cumarin .....	6 grains

Dissolve the borax in the water, heat the solution to about 150° F., and add the shellac. Heat until dissolved, then strain, add the cumarin and make up with water to one quart.

The varnish is applied with a flat camel-hair brush, after the hats have been bleached. Before varnishing it is advisable to dip the hats in a 1:100 glycerin solution in order to prevent them from becoming too brittle when dry. After varnishing, the hats should be placed on suitable forms whereon they may dry into shape.

**To Remove Taste of New Wooden Vessels.**

First scald with boiling water, and then wash with soda lye, to which a little lime has been added. Finally, rinse again with boiling water.

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**SOAPS.**

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**Alabaster Soap.**

Stearin .....	6½ pounds
Cocanut oil.....	11 pounds
Glycerin .....	6½ pounds
Lye .....	9 pounds
Alcohol .....	13 pounds
Oil of bergamot .....	2 ounces
Oil of geranium.....	½ ounce
Oil of neroli .....	½ ounce
Oil of lemon .....	½ ounce

Boil the stearin and cocoanut oil with the lye to saponification, add the alcohol, then the glycerin, and finally the perfume. Put into molds when nearly cool.

#### Bitter Almond Soap.

White soap..... 10 pounds  
Oil of bitter almond..... 2 ounces

Liquefy the soap with the aid of some boiling water, add the oil, and run into molds.

#### Almond Soap, Inferior.

White tallow soap..... 50 pounds  
Nitrobenzol ..... ¼ pound  
Liquefy and mix.

#### Ammonia Soap.

Add stronger ammonia water to oleic acid until only a faint odor of ammonia remains, and the mass becomes translucent and jelly-like.

#### Ammonia Soap.

Liquefy any white soap and impregnate with gaseous ammonia until the liquid becomes saturated.

#### Ammonia Soap.

Soap, in powder..... 1 pound  
Alcohol ..... 8 pints  
Stronger ammonia water.. ½ pound

Dissolve the soap in the alcohol and add the ammonia.

#### Arsenical Soap (for Taxidermy).

White arsenic..... 4 ounces  
Slaked lime..... 4 ounces  
Sodium carbonate..... 12 ounces  
Powdered camphor..... 6 drams  
Soft soap..... 4 ounces

Mix thoroughly, adding water to bring the mixture to the consistence of soft soap.

#### Arsenical Soap, Taxidermists' Soap.

Powdered camphor..... 2½ ounces  
White arsenic..... 16 ounces  
White soap..... 15 ounces  
Potassium carbonate..... 6 ounces  
Quicklime ..... 2 ounces  
Oil of origanum..... 2 drams  
Boiling water, a sufficiency.

Mix the powders. Boil the shredded soap with water to a jelly, add to the powders with the oil and sufficient water to make a stiff paste.

#### Beef Marrow Soap.

Beef marrow..... 1 pound  
Soda lye..... ½ pound  
Salt ..... 5 ounces  
Water, enough.

Mix the marrow and lye, heat gently and stir till saponified. Add 4 pints of boiling water and then the salt dissolved in two pints of water, with constant stirring. Allow to stand and pour into frames, leave a day or two to settle.

#### Benzoin Soap.

Cocoanut oil..... 4 pounds  
Soda lye..... 2 pounds  
Tincture of benzoin..... 4 ounces  
Talc ..... ½ ounce

Saponify the oil and lye, then stir in the tincture and talc.

#### Black Soap.

Soft soap..... 7 pounds  
Train oil..... 1 pound  
Water ..... 1 gallon

Boil to proper consistency, adding ivory black or powdered charcoal to suit.

#### Borax Soap Powder.

Curd (hard) soap, in powder ..... 5 parts  
Soda ash..... 3 parts  
Sodium silicate..... 2 parts  
Borax ..... 1 part

Each ingredient is thoroughly dried, and all mixed together by sieving.

#### Borax Soap.

Borax ..... 1 pound  
Dry soap..... ½ pound  
Calcined soda..... 4 pounds

Mix. Boil with water to proper consistency and run into molds.

#### Bran Soap.

Add from 2 to 5% bran to good soap, after liquefying.

#### Camphor Soap.

Cocoanut oil..... 5 pounds  
Soda lye..... 2½ pounds  
Camphor ..... 4 ounces  
Alcohol ..... 8 ounces  
Oil of rosemary..... 1 ounce

Saponify the oil and lye and stir in the camphor dissolved in the alcohol and perfume.

#### Camphor Soap.

Spermaceti ..... 4 ounces  
Camphor ..... 2 ounces  
White curd soap..... 6 pounds

Melt the spermaceti and camphor and add the mixture to the soap with constant stirring.

#### Carbolic Soap.

Cocoanut oil soap..... 75 ounces  
Alcohol ..... 10 ounces  
Carbolic acid..... 6 ounces  
Caustic potash..... 2 ounces  
Oil of lemon..... 1 ounce

Melt the soap and add to it the three last ingredients, dissolved in the alcohol. Mix well and pour into molds.

#### Carbolic Soap.

Palm soap..... 10 pounds  
Starch ..... ½ pound  
Carbolic acid, crystals... ½ ounce  
Oil of lavender ..... 1 ounce  
Oil of cloves ..... ½ ounce

The carbolic acid, starch and perfume are added to the soap in a melted state and thoroughly mixed.

#### Carpet Soap.

Fuller's earth..... 4 ounces  
Oil of turpentine..... 1 ounce  
Pearlash ..... 8 ounces  
Soft soap, a sufficiency.

Rub to a stiff paste.

#### Castile Soap.

Olive oil..... 4 pounds  
Suet ..... 3 pounds  
Tallow ..... 3 pounds  
Soda lye, enough to saponify.

Mix and saponify with a gentle heat.

#### Castile Soap.

Olive oil..... 10 pounds  
Soda lye..... 5 pounds  
Alcohol ..... 3 pints

Heat on a water bath until saponified. Add 30 pints of hot distilled water, dissolve and "salt" out by a filtered solution of sodium chloride (1:4).

**Cocoonut Oil Soap.**

Cocoonut oil..... 50 pounds  
Soda lye..... 50 pounds  
Boil for 1 or 2 hours, until thoroughly saponified.

**Cod Liver Oil Soap.**

Cod liver oil..... 1 pound  
Caustic soda..... 2 ounces  
Water..... 5 ounces  
Dissolve the soda in the water, add the oil and stir or shake until saponified.

**Curd Soap.**

Boil 700 kilograms of tallow with soda lye of 15 degrees to a clear jelly, and introducing 450 kilograms of palm-nut and 100 kilograms of cocoonut oil, with the requisite quantity of caustic lye of 23 degrees. The mixture is then boiled until a clear jelly, free from froth, is obtained. After the lapse of 2 hours any scum upon the surface is removed, and the product "salted," or precipitated respectively with salt solution of 20 degrees, or caustic soda lye of 40 degrees.

**Deodorizing Fat for Making Fine Soaps.**

Boil 100 pounds of fat with 35 pints of water containing 6 ounces of common salt and 3 pounds of powdered alum, for 10 minutes. Strain off the water.

**Disinfecting Soap.**

Oil of tar..... 1 pound  
Cocoonut oil..... 2 pounds  
Soda lye..... 1 pound  
Boil together until saponified.

**Eucalyptus Dog Soap.**

Soft soap, 30 ounces; carbolic acid, 3 ounces; oil of eucalyptus, 1 ounce; water, to make, 160 ounces. Dissolve the soap in hot water, and when cold, add the carbolic acid and eucalyptus oil. For use, wet the dog thoroughly with warm water, beginning with the head. Pour the liquid soap along the back and work up a copious lather on every part of the animal, adding more water and liquid soap as required. Rinse the dog well in tepid water, wipe dry, and finally exercise.

**Cresol Disinfecting Soap.**

Yellow soap..... 10 pounds  
Cresol..... 3 ounces  
Olive oil..... 1 pint

Mix the cresol with the olive oil and stir into the melted soap.

**Cresol Soap.**

White curd soap..... 10 pounds  
Cresol..... 3 ounces  
Eucalyptus oil..... 1 ounce

Mix thoroughly.

**Disinfectant Soap.**

White curd soap..... 10 pounds  
Thymol..... 2 drams  
Menthol..... 2 drams  
Eucalyptus oil..... 1 ounce  
Boric acid..... 4 ounces  
Alcohol..... 8 ounces

Dissolve the thymol, menthol and boric acid in the oil and alcohol and stir in the soap.

**Disinfectant Soap (Sublimate).**

Cocoonut oil..... 50 pounds  
Soda lye..... 25 pounds  
Corrosive sublimate..... ½ pound  
Water, hot..... 4 pints

Saponify the oil and lye, dissolve the corrosive sublimate in the hot water and stir into the soap before it solidifies. Run into molds.

**Eau de Cologne Soap.**

White castile soap..... 2,000 parts  
Oil of lemon..... 8 parts  
Oil of neroli..... 4 parts  
Oil of sweet orange..... 6 parts  
Oil of rosemary..... 1 part  
Oil of thyme..... 1 part  
Oil of petit grain..... 2 parts  
Essence of civet (13½ grains civet to 1 ounce of alcohol)..... 4 parts

Mix.

**Erasive Soap.**

White soap..... 12 ounces  
Borax..... 1 ounce  
Salts of tartar..... 1 dram  
Oil of sassafras..... 1 dram  
Water..... 8 ounces

Cut the soap in shavings and dissolve in the water by the heat of a water bath, add the borax and salts of tartar and boil till reduced to 1 pound; then, while cooling, add the oil of sassafras, and make into cakes of about 2 ounces.

**Erasive Soap.**

Fuller's earth..... 15 parts  
French chalk..... ½ part  
Yellow soap..... 10 parts  
Pearlash..... 8 parts

Mix thoroughly, and make into paste with spirit of turpentine. Color if desired. Form into cakes.

**Erasive Soap.**

Take fuller's earth, free from all gritty matter by elutriation with water; mix with ½ pound of the earth so prepared ½ pound of soda, as much soap, and 8 yolks of eggs, well beaten up with ½ pound of purified oxgall. The whole must be carefully triturated upon a slab, the soda with the soap, in the same manner as colors are ground, mixing in gradually the eggs and the oxgall, previously beaten together. Incorporate next the soft earth by slow degrees till a uniform thick paste be formed, which should be made into cakes of a convenient size and laid out to dry. A little of this detergent is scraped off with a knife and made into a paste with water and applied to the clothing.

**Essence of Soap.**

Under this title various preparations are made; but they are all solutions of soap in warm alcohol, with, generally, the addition of a small quantity of potash. Soaps made from vegetable oils are preferred, because they remain clear and liquid when cold, whereas those prepared from animal fats become solid in cooling. The following is a formula for preparing this soap:

White Marseilles soap..... 6½ ounces  
Alcohol, 85 per cent..... 1 quart  
Potash..... 6 drams

Cut the soap into fine shavings, and put them into a bottle holding about ½ gallon; add the alcohol and potash, and heat gently, without boiling, over a water bath; stir with a glass rod. When the solution is complete, take it out of the water bath and add the essences. A very sweet perfume may be given to this preparation by adding to it:

Oil of geranium..... 1½ drams  
Oil of verbena..... 2½ drams

To color yellow, add 2½ drams saffron.



This essence continues limpid at the ordinary temperature. To use it, pour a little into  $\frac{1}{2}$  tumbler of water, and stir quickly.

Mix.

#### Ether Soap.

Soft soap..... 4 ounces  
Alcohol ..... 3 ounces  
Mix and after 24 hours decant and add:  
Ether ..... 6 ounces  
Mix.

#### Ether Soap.

Oleic acid..... 5 ounces  
Caustic potash solution (1:1), a sufficiency.  
Alcohol ..... 3 ounces  
Ether, enough to make... 1 pint  
Mix the oleic acid with the alcohol in a flask, drop in the potash solution until neutral. Shake well. Add 1 dram of potash solution and enough ether to make 1 pint.

#### Floating Soap.

Melt 14 pounds good, hard oil soap in 3 pints water by aid of heat, and assiduously heat together until the soap has at least doubled its volume. Color with 1 ounce vermilion, perfume, pour into frames not more than 6 inches deep.

#### Floating Soaps.

Cocoonut oil..... 88.0 pounds  
Soda lye, 38° B..... 46.2 pounds  
Potash lye, 25° B..... 2.2 pounds

Melt the cocoonut oil in the usual manner, fitter into capacious jacketed kettle or one placed in a water bath, and heat to about 122° F. Then add the lye, stir well for about 10 minutes, and then cover up the kettle. Allow to saponify and then thoroughly stir again. The soap will now have the appearance of fine woolly grains.

#### Cresol Floor Soap (Antiseptic Floor Soap).

Carbolic soap..... 1 pound  
Potassium carbonate..... 2 ounces  
Water ..... 20 ounces  
Cresol ..... 2 ounces  
Citronella oil..... 2 drams  
Alcohol, a sufficiency.

Cut the soap into small pieces, heat with water in which the potassium carbonate has been dissolved. Add the perfume and cresol and enough alcohol to make the proper consistency.

#### Liquid Laundry Soap.

Pour 250 grams of water over 5 grams of powdered gum arabic until the powder swells uniformly; then add 750 grams of boiling water, dissolve 50 grams of borax in it, and stir 50 grams of stearin and 50 grams of talcum into the whole. Of this fluid add  $\frac{1}{4}$  liter to 1 liter of boiled starch, or apply the mixture by means of a sponge on the starched wash, which is then ironed.

#### Formaldehyde Soap.

White curd soap..... 10 pounds  
Solution of formaldehyde.. 1 pint

Mix.

#### Formaldehyde Soap.

White castile soap..... 10 pounds  
Solution of formaldehyde..  $\frac{1}{2}$  pint

Melt the castile soap, adding a little boiling water, on a water bath. Stir in the solution, just before solidifying.

#### Formaldehyde Soap (Liquid).

Liquid soap..... 1 pint  
Solution of formaldehyde.. 1 ounce

Mix.

#### Glycerin Soap.

Twenty-six ounces of cocoonut oil, 30 ounces of suet, and 37½ ounces of castor oil are heated together and allowed to reach finally a temperature of 156° F.; to this mixture is then add 56 ounces of a 30 per cent caustic soda solution at a temperature of 66° F. When the mass has become quite stiff, it is heated in a water bath at a temperature of 180° to 190° F. until completely saponified and a clear, transparent product results; 25 ounces of sugar and 3 of glycerin dissolved in 26 ounces of water, strained and warmed to 190° F., is gradually stirred into the mixture; 10 ounces of freshly powdered sodium carbonate are then stirred into the mixture until it is thoroughly dissolved, when a sample of the resultant compound spread upon glass should become hard. The rest of the mixture is allowed to remain in the water bath for about 2 hours, when a sample cupful should remain firm, clear and transparent. This last can be insured, if necessary, by adding 1 to 2 ounces of sodium carbonate and warming the mixture to 145° F. when cooled, to 135° F. Several precautions are necessary in order to avoid the flocculent or turbid appearance of the product, namely, to use purified fats of the best quality, pure glycerin, and water free from lime.

#### Glycerin Soap.

Melt any mild soap and mix glycerin intimately with it in the proportion of 1/25 to 1/20 of the weight of the soap. Perfume as desired.

#### Liquid Glycerin Soap.

Oleic acid..... 187 pounds  
Cocoonut oil, best..... 33 pounds  
Potash lye, 35° B..... 114 pounds  
Glycerin ..... 10 pounds

The ingredients are saponified at a gentle heat, and sufficient 95 per cent alcohol added to make the soap clear.

#### Liquid Glycerin Soap.

Five hundred grams olein, 100 grams alcohol, and 280 grams potash lye (33 1/3 per cent) are placed in a flask and warmed over a steam bath, shaking frequently; a solution of 50 grams potassium carbonate in 100 grams of water is then added, and heating continued until a portion removed is entirely soluble in water. The soap is next dissolved in 1,570 grams glycerin, set aside a few days, filtered, and the filtrate perfumed as desired.

#### Liquid Glycerin Soap.

Castile soap..... 10 pounds  
Potassium carbonate.....  $\frac{1}{4}$  pound  
Glycerin ..... 15 pounds  
Alcohol ..... 25 pints

Make a solution and add more alcohol if a thinner soap is required. Perfume as desired.

#### Liquid Glycerin Soap.

Soft soap..... 10 pounds  
Glycerin ..... 5 pounds  
Alcohol ..... 2 pints  
Oil of bitter almond..... 2 drams

Mix and dissolve.

#### Transparent Glycerin Soap.

One hundred pounds dry bar soap to be heated and melted; then pour in 25 pounds or more of melted sal soda. Agitate together at a low heat. Then add 100 to 125 pounds of glycerin; agitate, keeping up a moderate heat. Let settle; draw off into molds or soap frames. When cold cut into bars and cakes.

**Transparent Glycerin Soap.**

Best tallow.....	10 kilograms
Best olive oil.....	2 kilograms
Best cocoanut oil.....	4 kilograms
Solution caustic soda (38° B.).....	6½ kilograms
Solution caustic potash (38° B.).....	6¼ kilograms
Water, distilled.....	1 kilogram
Glycerin (C. P.) (28° B.).....	8 kilograms
Alcohol.....	6¾ kilograms
Water.....	1¼ kilograms

**Perfume with**

Oil of bergamot.....	300 grams
Oil of geranium.....	50 grams
Oil of sandalwood.....	10 grams
Oil of Ceylon cinnamon.....	20 grams
Oil of cloves.....	20 grams
Oil of petit grain (French).....	50 grams
Oil of lavender.....	50 grams
Alcohol, 94 per cent.....	500 grams

Melt the fats and strain. Heat to 75° C., add the glycerin and the aqueous solution of the alkalies in a thin stream. Heat and stir until saponification takes place. Cool the mixture to 80° C., then add the alcohol previously mixed with the water, this will re-dissolve the mass. Finally add the perfume, pour into molds and let cool.

**Transparent Glycerin Soap.**

Animal fat.....	10 pounds
Cocoanut oil.....	1 pound
Soda lye.....	5 pounds
Salt.....	2 pounds
Glycerin.....	3 pounds
Water.....	20 pounds

Saponify on water bath the fat, oil and lye, add the salt, water, and glycerin. Color and perfume to taste.

**Green Soap.**

Make this soap (in a glass or porcelain vessel) by dissolving 8 parts caustic potassa in 12 parts distilled water, then adding 24 parts olive oil, and stirring the mixture occasionally, until saponification is complete (twenty-four hours or more). The whole is then made up to 56 parts with distilled water.

**Hand Scrubbing Soap (Soap Paste).**

Soft soap.....	16 ounces
Ammonia water.....	1 ounce
Pumice stone, fine powder.....	6 ounces

Mix well, put up in well closed cans.

**Hand Soap.**

Powdered castile soap.....	1 pound
Kaolin.....	1½ pounds
Pumice stone powder.....	2 ounces
Borax.....	½ pound

Mix and make into a paste with water.

**Hand Paste.**

Soft soap.....	1 pound
Fine sand.....	1 pound
Glycerin.....	4 ounces

Mix well.

**Motorists' Liquid Soap.**

Soft soap.....	3 pounds
Oil of turpentine.....	1 pint

Melt the soap in an evaporating dish. Remove it from the fire, add the turpentine little by little, stirring after each addition. When cold rub a small piece into the hands, rinse with warm water, and the most obstinate stains can be removed. Terebene or sanitas oil, according to the author, can be employed in place of oil of turpentine.

**Honey Soap.**

Soap recent.....	100.0
Purified honey.....	5.0
Roasted sugar.....	5.0
Odoriferous mixture.....	2.0

Mix.

**Honey Soap.**

White castile soap.....	1 pound
Honey.....	1 pound
Tincture of benzoin.....	4 ounces
Storax.....	½ ounce

Mix well in a mortar, then melt over a water bath, pass through a fine sieve and run into molds.

**Iodine Soap.**

In order to prepare a soap containing iodine it has been suggested to first iodize the fat or fatty matter by heating it with iodine and then saponifying in the usual way.

**Iodine Soap.**

Iodine.....	½ ounce
Oleic acid.....	4 ounces
Alcohol.....	4 ounces
Stronger ammonia water.....	1 ounce

Mix the oleic acid and ammonia water, shake and add the alcohol in which the iodine has been dissolved.

**Iodine Soap.**

Iodine.....	1 ounce
Oleic acid.....	2 ounces
Stronger ammonia water.....	½ ounce
Paraffin oil.....	20 ounces

Dissolve the iodine in the oil with gentle heat, then add the oleic acid and the ammonia water. Shake well.

**Iodine Soap.**

Iodine.....	1 ounce
Alcohol.....	5 ounces
Oleic acid.....	6 drams
Stronger ammonia water.....	2 drams
Glycerin, enough to make.....	20 ounces

Dissolve the iodine in the alcohol; saponify the acid and ammonia; mix both solutions and add the glycerin.

**Iodide Potassium Soap.**

Castile soap.....	1 pound
Potassium iodide.....	1 ounce
Water.....	3 ounces

Dissolve the potassium iodide in the water and add to the melted soap.

**Lanolin Soap.**

Melt together

Ceylon cocoanut oil.....	60 pounds
Yellow lanolin.....	6 pounds

Saponify with

Alkali (38° B.).....	33 pounds
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After cooling, incorporate

Oil of cloves.....	1 ounce
Oil of thyme.....	1 ounce
Oil of lavender.....	1 ounce
Oil of cinnamon.....	½ ounce
Oil of bergamot.....	½ ounce

**Liquid Soap.**

Mix one part caustic potash dissolved in an equal weight of water and four parts olive oil and one-fourth part of alcohol. Shake all together thoroughly for ten minutes. Stir the mixture repeatedly during the next hour, then mix with an equal quantity of water, and after letting stand for several days, filter. If it is desired to increase the disinfectant properties of this soap, incorporate some carbolic acid.

**Liquid Soap, Alkaline.**

Add 4 per cent of potassium carbonate to the neutral liquid soap. It is an excellent detergent for the skin, instruments and other objects, is useful in the bath to remove any greasy matter in the scalp, and its action is similar to tincture of soap.

**Liquid Soap, Neutral.**

This is meant to be an absolutely neutral potash soap, but as complete saponification is brought about only by excess of alkali, which in the case of potash cannot subsequently be salted out or removed in any other manner, a special procedure is necessary. A soda soap is first made from pure olive oil and decomposed by dilute sulphuric acid. The fatty acids thus obtained are washed with distilled water until the latter runs off entirely neutral. These acids are then saponified with caustic potash so that a complete neutral soap results, and in order to prevent its thickening pure glycerin is added. Such soap is transparent, soluble in water and alcohol and resembles honey. It is perfectly neutral, specific gravity, 1.05. This may be perfumed for the toilet.

**Liquid Soaps, Superfatted.**

Unna prepares these by adding 3 or 4 per cent of olive oil to the neutral soap. While Buzzi acknowledges the mild effect of these soaps he prefers the use of lanolin for the purpose of superfatting. He makes an emulsion of 3 or 4 per cent of lanolin with the neutral liquid soap.

**Liquid Soap.**

Sodium hydrate.....	1 ounce
Potassium hydrate.....	1 ounce
Cottonseed oil.....	12 ounces
Alcohol .....	6 ounces
Distilled water, enough to make.....	4 pints

Dissolve the hydrates in 6 ounces of water, add the alcohol and then the oil in 3 or 4 portions, shaking vigorously until saponified. Add the remainder of the water and mix.

**Medicinal Soaps.**

The base for most medicated soaps is made after the following formula:

Mutton suet.....	593 parts
Olive oil.....	74 parts
Caustic soda.....	222 parts
Caustic potash.....	111 parts

Mix and make a soap.

This is called the "basic soap." Castile soap may be substituted for basic soap.

**Medicinal Soaps in Powder.**

A neutral soap is made by boiling soda solution and beef suet together, and is used in the form of a fine, anhydrous, hygroscopic powder, forming the basis for all the soaps and being called neutral soap powder base. A base containing free or excessive fat is obtained by the addition of 2 per cent oleic acid and 3 per cent lanolin, while an alkaline soap powder base results from the addition of 2.5 per cent each of potassium and sodium carbonates. With either of these soap bases may be incorporated the following agents: 20 per cent pumice stone; 10 per cent sulphur, balsam of peru, chrysarobin; 5 per cent salicylic acid, betanaphthol, camphor, borax, pyrogallol, menthol, salol, tannin, thiol, naphthalene; 3 per cent benzoïn, iodoform, iodol; 0.2 per cent thymol, iodine, aristol, eucrophen, quinine sulphate; 2 per cent cantharidin. If desired more than one medicinal ingredient may be used in proper combination.

**Medicinal Antiseptic Soaps.**

Basic soap, a convenient quantity.	
Oil of wintergreen.....	2 per cent.
Oil of pine needles.....	2 per cent.
Terebene .....	2 per cent.
Thymol .....	2 per cent.
Sulphur .....	10 per cent.
Tar .....	10 per cent.

Any one, or combinations of two or more, of these medicinal agents, may be incorporated with the basic soap before it is run into molds. Terebene and thymol may be dissolved in a small quantity of alcohol before incorporating.

**Medicated Carbolic Soap.**

Basic soap.....	100 ounces
Carbolic acid, crystals.....	1 to 5 ounces

Melt the basic soap on a water bath and incorporate the carbolic acid.

**Creolin Soap.**

Basic soap.....	95 parts
Creolin .....	5 parts

Mix.

**Ergotin Soap.**

Basic soap.....	95 parts
Ergotin .....	5 parts

Mix.

**Ichthylol Soap.**

Basic soap.....	95 parts
Ichthylol .....	5 parts

Mix.

**Quinine Soap.**

Basic soap.....	97 parts
Quinine sulphate.....	3 parts

Mix.

**Resorcin and Salicylic Acid Soap.**

Basic soap.....	94 parts
Resorcin .....	3 parts
Salicylic acid.....	3 parts

Mix.

**Metallic Soaps.**

Metallic soaps are obtained by means of double decomposition. A solution of soap (basic or castile) is boiled with a solution or a metallic salt (chloride or sulphate) and an oleate of the metal is thus obtained. The metallic soap is gathered on a linen cloth and then dried on glass plates.

**Oatmeal Soap.**

White soap.....	25 pounds
Cocoonut oil soap.....	10 pounds
Oatmeal, coarsely ground.	5 pounds

Melt the soaps, adding some boiling water, then incorporate the oatmeal and run into molds.

**Oxgall Soap.**

Oxgall .....	10 ounces
Stearin soap.....	9 ounces
Borax, powdered.....	1 ounce
Alcohol .....	1½ ounces

Mix the first three ingredients at a slightly elevated temperature; then add the alcohol, transfer the whole to a flat-bottomed vessel, and when cool cut the soap into convenient pieces. The stearin soap is prepared as follows:

Stearic acid.....	2 troy ounces
Sodium carbonate, crys-	
tallized .....	560 grains
Water .....	8 ounces
Alcohol .....	2 fl. drams
Sodium chloride.....	4 fl. drams



Dissolve 540 grains of the crystallized sodium carbonate in 6 fluid ounces of water; transfer the solution to a steam bath, and gradually add the stearic acid with constant agitation; then add the alcohol; cover the vessel and allow it to remain on the steam bath for six hours to separate the soap. Add the sodium chloride and the remainder of the sodium carbonate dissolved in the remainder of the water; transfer the whole to a strainer, and when cold press out the remainder of the moisture.

#### Oxgall Soap.

Purified oxgall..... 1 part  
White curd soap..... 2 parts

The soap is cut into shavings and melted in the oxgall at a moderate heat, evaporating until of proper consistency. The oxgall is prepared by boiling it with 10 to 12 parts of wood spirit and straining.

#### Oxgall Soap.

Mix together 1½ kilograms oxgall with 25 kilograms melted cocoanut oil. Saponify this mixture by the cold process with 12½ kilograms caustic soda lye of 38° B. The soap may be dyed by the addition of 850 grams of ultramarine, and, if desired, perfumed with a mixture of 75 grams of lavender oil and 75 grams of caraway seed oil. Oxgall soap is used for scouring woolen goods.

#### Soft Oxgall Soap.

Oxgall ..... 10 ounces  
Potassium soap..... 5 ounces  
Sodium soap..... 4 ounces  
Borax ..... 1 ounce  
Ammonia water..... 1 ounce

Mix the ingredients at a slightly elevated temperature.

#### Oxgall Soap.

Borax ..... 1 ounce  
Fresh oxgall..... 4 ounces  
Melted soap..... 1 pound

Mix the oxgall and borax intimately with the aid of one ounce of boiling water, then incorporate with the soap.

#### Petroleum Soap.

Petroleum ..... 1 pound  
Beeswax ..... 1 pound  
Alcohol ..... 1 pint  
Castile soap, shredded... 2 pounds

Dissolve, on a water bath, the wax in the petroleum and alcohol, add the soap, stir till it begins to set and run into molds.

#### Lemon Soap.

Curd soap..... 6 ounces  
Eau de cologne..... 2 ounces  
Lemon juice..... 2 ounces

Melt on a water bath, mix thoroughly and pour into molds.

#### Polishing Soap.

Cocoanut soap..... 5 pounds  
Chalk ..... 6 ounces  
Alum ..... 3 ounces  
Cream of tartar..... 3 ounces  
Lead carbonate..... 3 ounces

Cut the soap in shavings and put into an iron pot with a small quantity of water.

The powders are mixed with a small quantity of water until chemical action is over. During this time heat the soap and water, and when in a homogeneous mass add the other ingredients, incorporate thoroughly and pour into suitable molds to form bars, which can afterwards be cut into cakes.

Applied as a soap to metal surfaces and afterward rubbed with a chamois, it will produce a handsome polish on the metal.

#### London Soap Powder.

Yellow soap..... 6 parts  
Soda crystals..... 3 parts  
Pearlash ..... 1½ parts  
Sodium sulphate..... 1½ parts  
Palm oil..... 1 part

These ingredients are combined as well as possible without any water, spread out to dry, and then ground into coarse powder. Taking this formula as a type one may infer that soap powders may be varied to suit almost any purpose. They are adapted to hard waters, as their excess of carbonated alkali neutralizes the lime in the water.

#### Pearl Soap Powder.

Curd soap (powdered).... 4 parts  
Sal soda (crude sodium carbonate) ..... 3 parts  
Sodium silicate..... 2 parts

Dried as much as possible, and intimately mixed.

#### Soap Powder, Perfumed.

The preceding powder, when melted, is perfumed to any odor desired; for instance:

Soap ..... 6 pounds  
Essence of bergamot..... 4 ounces  
Essence of lemon..... 1 ounce  
Essence of Portugal..... ½ ounce  
Essence of anise or fennel ½ ounce

#### Soap Powder, Almond.

Castile soap, powdered... 1 pound  
Almond powder..... 1 pound  
Cuttlefish bone, powdered. 2 ounces  
Orris root..... 2 ounces  
Perfume, to suit.

Mix well.

#### Borax Soap Powder.

Hard soap, powdered.... 5 ounces  
Soda ash..... 3 ounces  
Sodium silicate..... 2 pounds  
Borax ..... 1 pound

Each ingredient must be well dried before mixing.

#### Pumice Soap.

Domestic soap, dried and rasped ..... 10 pounds  
Crystallized sodium carbonate ..... 6 ounces  
Hot water..... 1½ pints

Heat upon the water bath until soft; thoroughly mix. Then add:

Pulverized pumice stone.. 3 pounds  
Pulverized talc..... 1 pound  
Perfume, q. s., to suit.

#### Pumice Soap.

Cocoanut oil soap..... 2 pounds  
Water ..... ½ pound  
Powdered pumice stone.. 1 pound  
Talc, powdered..... ¼ pound

Melt the soap and water on a water bath and then mix in the powders.

#### Pumice Soap.

Cocoanut oil soap..... 2 pounds  
Soda lye..... 1 pound  
Powdered pumice stone.. 1½ pounds  
Oil of thyme ..... ¼ ounce  
Oil of bergamot ..... 1 dram

Prepare as before and add the essential oils just before running into molds.

**Putz Soap.**

Soap .....	16 parts
Precipitated chalk.....	2 parts
Jewelers' rouge.....	1 part
Cream of tartar.....	1 part
Magnesium carbonate.....	1 part

Water, q. s.  
Shave the soap (white castile soap is best) fine, heat with enough water to make a soft paste, and work in the other ingredients, previously well mixed.

**Putz Soap (Putz Pomade).**

Oxalic acid.....	2 ounces
Soft soap.....	8 ounces
Sweet oil.....	8 ounces
Oil of turpentine.....	1 ounce
Rotten stone.....	4 pounds
Boiling water.....	1 pint

Dissolve the acid in the water, add the rotten stone, and finally the other ingredients to form a perfectly smooth paste.

**Putz Soap (Putz Pomade).**

Silica, in fine powder.....	10 ounces
Kieselguhr .....	1 ounce
Oleic acid.....	1 1/4 ounces
Mix and add the following mixture:	
Sodium silicate.....	1/4 ounce
Caustic soda.....	1/4 ounce
Water .....	2 ounces

Mix thoroughly and put into suitable molds. Dry for a week.

**Rosin Soap (Insecticide Soap).**

Rosin, in powder.....	2 pounds
Caustic soda.....	1 pound
Tallow .....	1 pound

Dissolve the soda in 1 1/2 gallons of water, add the rosin and tallow, and heat the mixture to effect combination.

This soap can be liquefied and used as a spray by diluting with water to make 40 gallons of liquid. It is a good insecticide. Fish oil may be used in place of rosin.

**Rosin Soap.**

Yellow rosin.....	3 drams
Caustic soda.....	5 drams
Water .....	1 pint

Boil for two hours, evaporate to dryness and powder. This soap is used as an emulsifying agent for oils and water.

**Salve Soap (Mollin).**

Lard .....	2 pounds
Solution of potash (sp. gr. 1.130) .....	2 pounds
Alcohol .....	4 ounces
Glycerin .....	10 ounces

Mix the first three ingredients, stir, and let stand for 12 hours, then add the glycerin and mix well.

This soap is recommended by Unna as an ointment base.

**Salve Soap, Camphorated.**

Camphor .....	1 ounce
Salve soap.....	19 ounces
Alcohol, a sufficient quantity.	

Dissolve the camphor in a small quantity of alcohol and mix with the soap.

**Salve Soap, with Creolin.**

Creolin .....	1 ounce
Salve soap.....	9 ounces
Mix.	

**Salve Soap, Medicated.**

As directed in the preceding formulas, the salve soap may be used as a base, with other medicinal agents, for instance:

Creosote .....	10 per cent.
Ichthyol .....	5 to 50 per cent.
Iodoform .....	5 to 10 per cent.
Iodol .....	5 to 10 per cent.
Lanolin .....	20 per cent.
Naphthol .....	1 per cent.
Oil of cade.....	20 per cent.
Oleum rusci.....	10 per cent.
Peruvian balsam.....	10 per cent.
Potassium iodide (dissolved in water).....	5 to 10 per cent.
Thymol .....	10 per cent.

**Sand Soap.**

Curd soap, 7 pounds; marine soap, 7 pounds; sifted silver sand, 28 pounds; otto of thyme, of cassia, or caraway, of French lavender, each 2 ounces. Melt the soaps and mix in the other ingredients.

**Sand Soap.**

Cocoanut oil soap.....	3 pounds
Fine sand.....	3 pounds

Melt the soap with the aid of a little water on a water bath and mix in the soap.

**Savine Soap.**

Powdered domestic soap.....	150
Powdered borax.....	5
Oil of savine.....	10
Extract of savine.....	10
Distilled water, quantity sufficient.	

Mix. To use as a wash for scabies, herpes, etc.

**Scouring Soap.**

Hard soap.....	10 pounds
Pearlash .....	2 pounds
Oil of juniper.....	1 pound

Dissolve the pearlash in a little water, add the soap and melt on a water bath, incorporate the oil of juniper, and run into molds.

**Scouring Soap.**

Caustic soap.....	10 ounces
Alcohol .....	5 ounces
Yolks of 8 egg,	
Oil of turpentine.....	1 ounce

Dissolve the soap in the alcohol on a water bath and mix in the other ingredients.

**Scouring Soap.**

White soap.....	1 pound
Oil of turpentine.....	1 ounce
Ammonium chloride.....	3 drams

Melt and mix.

**Sea Water Soap.**

All sea water soaps are strongly alkaline and should be used with care. They can be made by mixing ordinary soap with lye (5 to 20 per cent), for instance:

Powdered castile soap....	1 pound
Soda lye.....	2 ounces

Melt the soap and add the lye.

**Shaving Soaps and Powders.**

Shaving soap is made by melting together 400 parts of beef tallow, 200 parts of cocoa butter, let the mixture cool to about 128° F. and 340 parts of soda lye of 30°, and 60 parts of potash lye of 30° are added. The temperature is then slightly raised, the mixture stirred for 30 minutes, and perfumed while still warm with a mixture of 2 parts of oil of caraway, 2 1/2 parts oil of bergamot, 1 1/2 parts oil of lavender, 1 part oil of thyme, and

1-3 part oil of mirbane. The warm mass is poured into a square or oblong mold, cooled, and after hardening cut into any desired pieces, which should be allowed to dry in the air a little while and then wrapped in tin foil. A good antiseptic shaving soap is made by adding to the foregoing, while semi-fluid, 30 parts of salol in powder, and raising the temperature until the salol melts. A shaving soap is made by powdering 1,000 parts of any good tallow soap, and to each 2 pounds of the powder adding a mixture of 1 grain of cumarin, 5 drops oil of bergamot, 2 drops oil of wintergreen, and 3 drops of balsamic oil mixture (oleo balsamic mixture of National Formulary).

#### Shaving Soap.

Melt together at 50° C., 12½ ounces of beef suet and 6 ounces of cocoanut oil. To this add 10½ ounces of solution of soda (30° Baume) and 1½ ounces solution of potash. Maintain at this temperature for half an hour, stirring thoroughly until it becomes a uniform thin paste. Then add and thoroughly mix the following perfume:

Oil of caraway .....	30 minims
Oil of bergamot .....	40 minims
Oil of lavender .....	25 minims
Oil of thyme .....	15 minims
Essence of myrobalans.....	5 minims

To make the paste antiseptic, 1 ounce of salol may be added while the mass is still warm.

#### Shaving Soap.

White castile soap.....	8 ounces
Spermaceti .....	2 ounces
Olive oil.....	2 ounces

Melt upon a water bath, then stir until nearly cold, and add perfume to suit. This may be, according to the cost required, oil of mirbane, oil of bergamot, oil of geranium, oil of rose, or a mixture of these.

#### Shaving Soap.

Melt together 8 pounds best tallow, 6 pounds lard, 2 pounds castor oil, and saponify with 2 pounds of soda lye and 2 pounds of potash lye, each of 37° strength. Perfume the finished soap to suit.

#### Shaving Soap.

Tallow .....	10 pounds
Cocoanut oil.....	1 pound
Soda lye.....	9 pounds
Potash lye.....	2 pounds

Color and scent to taste. Boil together, stir, and run into molds.

#### Shaving Soap, Perfume.

Oil of caraway .....	4 ounces
Oil of bergamot .....	5 ounces
Oil of lavender .....	3 ounces
Oil of thyme .....	2 ounces
Oil of mirbane .....	1 ounce

Mix. About 1 dram to a pound of soap.

#### Silver Soap.

Cocoanut oil.....	5 pounds
Soda, or potash lye, 38° B	2½ pounds
English red.....	10 ounces
Water .....	10 ounces
Sal ammoniac.....	1 ounce

Mix the English red with the water and sal ammoniac, and stir the mixture well in with the soap mass while the latter is still hot.

#### Silver Soap.

Cocoanut oil.....	10 ounces
Soda lye, 20° .....	20 ounces
(by weight.)	

Boil these until saponification is complete, or take:

White soap.....	5 ounces
Water .....	5 ounces

Making a solution, with which intimately mix:

Prepared chalk.....	15 ounces
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If a red soap is desired, use the following, instead of 15 ounces of prepared chalk:

Prepared chalk.....	8 ounces
Red tripoli.....	2 ounces
White tripoli.....	3 ounces
Polishing rouge.....	3 ounces

Mix.

#### Silver Soap.

Hard soap.....	8 ounces
Oil of turpentine.....	1½ ounces
Water .....	4 ounces

Boil until perfect solution, and add

Ammonia water.....	3 ounces
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Mix.

#### Silver Soap.

Cocoanut oil soap.....	1 pound
Water .....	1 pound
Prepared chalk.....	2 pounds

Melt the soap and water on a water bath, then add the chalk and mix. For red colored soap, take red tripoli in place of half the chalk.

#### Soft Soap.

Heat solution of potassa (sp. gr. 1.144) 135 parts; add gradually linseed oil, 100; continue the heat for 30 minutes, then add alcohol, 25 parts, and as soon as the mixture has become uniform add gradually water, 200 parts, and heat until the mass becomes translucent and will be soluble in hot water without separating any oil; evaporate to 150 parts. According to the British Pharmacopoeia, soft soap is directed to be made from olive oil, while the U. S. Pharmacopoeia soap is made from linseed oil. As made upon the large scale, the saponification is commenced with a weak solution of caustic, because soap being insoluble in a strong solution of caustic, the particles of fat would by the use of a strong lye, become incased in an insoluble layer of soap, which would prevent further action from taking place. The oil or fat, and the lye are boiled together in a kettle until the pasty product becomes of sufficient consistency to draw threads out of the substance. It then undergoes the process of clear boiling, for which a stronger lye is used, the mixture being stirred continuously during the operation. When the paste does not sink any more—first it ascends—boils quietly, and shows the formation of scales, it may be considered finished.

#### Domestic Soft Soap.

Potash .....	7½ pounds
Grease .....	10 pounds
Water .....	37½ gallons

Dissolve the potash in part of the water, add 1-3 of the grease, and heat. Mix in the remainder of the grease, put in a barrel and add the remainder of the water, a little at a time, for several days. Stir often. Ready for use in about 2 weeks.

#### Soft Soap.

Olive oil.....	16 ounces
Caustic potash.....	6 ounces

Dissolve 5 ounces of the caustic potash in 2 pints of water. Add 8 ounces of this solution to the oil in a suitable vessel, place over a moderate fire, and stir until the mixture has become sufficiently thick. Gradually add the remaining portion of the caustic potash solution; stir occasionally until the mixture as-



sumes a yellowish transparent, gelatinous form. Dissolve the remaining ounce of caustic potash in 2 pints of water, add to the mass and evaporate to the proper consistency.

#### Neutral Soft Soap.

Evaporate the liquid soap until of the consistency of salve.

#### Alkaline Soft Soap.

Add 4 per cent. of potassium carbonate to the neutral soft soap.

#### Superfatted Soft Soap.

A mixture of 90 parts neutral soft soap and 10 parts lanolin is used as a base for superfatted medicated soft soap.

#### Soft Soap, to Make Hard.

Put into a kettle four paulfuls of soft soap, and stir in it, gradually, about 1 quart of common salt. Boil until all the water is separated from the curd, remove the kettle from the fire and draw off the water with a siphon (a yard or so of India rubber hose will answer). Then pour the soap into a wooden form in which muslin has been placed. For this purpose a wooden box, sufficiently large and tight, may be employed. When the soap is firm, turn it out to dry, cut into bars with a brass wire and let it harden. A little powdered rosin will assist the soap to harden and give it a yellow color. If the soft soap is very thin, more salt must be used.

#### Soft Soap.

Cottonseed oil.....	6 pounds
Caustic potash.....	2 pounds
Alcohol .....	1 pint
Water .....	6 pints

Dissolve the potash in the water, add the oil, boil until saponified, when cool add the alcohol.

#### Soft Soap.

Cottonseed oil.....	14 pounds
Caustic potash.....	3 pounds
Alcohol .....	2 pints
Water .....	16 pints

Proceed as directed in the preceding.

#### Soft Soap.

Linseed oil.....	4 pints
Olive oil.....	4 pints
Caustic potash.....	2 pounds
Alcohol .....	1 pint
Water .....	½ pints

Prepare as directed in the preceding.

This is an excellent shampoo soap and may be perfumed as desired.

#### Superfatted Soap.

Wool fat.....	4 ounces
Soft soap.....	20 ounces
Hard soap.....	76 ounces

Melt and mix.

#### Superfatted Soaps with Tar.

Wool fat.....	4 parts
Tar .....	5 parts
Soft soap.....	15 parts
Hard soap.....	76 parts

Melt and mix.

#### Superfatted Soap with Sulphur.

Wool fat.....	4 ounces
Precipitated sulphur.....	10 ounces
Soft soap.....	20 ounces
Hard soap.....	66 ounces

Melt the soaps and wool fat together, mix in the sulphur and run into molds.

#### Soap for Cleaning Elastic Stockings.

Powdered soap.....	2 pounds
Distilled water.....	3 pints

Dissolve the soap in the water, and when solution is complete allow to stand for two days and add:

Ammonia water.....	7 ounces
Cologne spirit.....	33 ounces

Dissolve ½ ounce of the soap in a quart of cold water, in which let the stockings steep for 24 hours; then remove and wash well in cold water by shaking.

#### Tar Soap.

Medicinal soap (castile soap) .....	24 parts
Sodium carbonate, dried and powdered.....	2 parts
Sodium borate, powdered..	1 part
Tar .....	8 parts
Water, quantity sufficient.	

Mix together to form a mass of pilular consistence and divide it into pieces of suitable size.

#### Medicated Tar Soap.

Cocoonut oil.....	20 pounds
Tallow .....	10 pounds
Juniper tar.....	5 pounds
Soda lye (40° B.).....	15 pounds

Mix.

#### Cosmetic Tar Soap.

Tar soap, recently made..100.0

Mix with

Balsam peru.....	2.0
Tallow .....	1.5
Pulverized soap.....	10.0
Water .....	2.5

Mix.

#### Tincture Green Soap.

Green soap, 100 parts; strong alcohol, 50 parts; and oil of lavender, 0.2 part. This forms a convenient vehicle for the external application of chloroform, oil of turpentine, tar, benzol and ether, of which equal parts may be dissolved in the solution. At the temperature of the body the tincture will dissolve 40 per cent. of carbon disulphide.

#### Tooth Soap.

Heat together on a water bath 15 pounds of cocoanut oil and 5 pounds of olive oil, and when melted add 5 ounces of Berlin red, 5 ounces of calamus, 2½ ounces of cloves, 1 pound of sugar, 5 ounces of precipitated chalk, 1 pound of orris root (all in fine powder). Heat the mixture to about 82° F., then add 10 pounds of soda lye (38° B.), at the same temperature. When saponification is complete, add the following perfume:

Oil of peppermint .....	4 ounces
Oil of star anise .....	1 ounce
Oil of cloves .....	2 ounces
Oil of cassia .....	3 drams

Mix this with the soap while it is in a pasty state, and set aside for a day or two to allow it to set, then cut up the mass into suitably sized blocks.

#### Tooth Soap.

Precipitated chalk.....	15 ounces
Orris root, powdered.....	2½ ounces
Powdered pumice stone....	1 ounce
Powdered castile soap....	5 ounces
Glycerin .....	2 ounces
Alcohol .....	12 ounces

Mix all together.

**Tooth Soap.**

Precipitated chalk.....	1 ounce
Carmine .....	10 grains
Ammonia water.....	1 dram
Powdered castile soap....	2 ounces
Oil of peppermint.....	$\frac{1}{2}$ dram
Alcohol .....	3 drams

Make into a paste, put into a mold and allow to harden.

**Tooth Soap, Liquid.**

Soap liniment.....	3 ounces
Tincture of myrrh.....	$\frac{1}{2}$ ounce
Glycerin .....	$\frac{1}{2}$ ounce
Oil of peppermint.....	10 drops
Solution of carmine, as required.	

Mix.

**Transparent Soaps.**

The fats used in the preparation of transparent soap are cocoanut oil, tallow and castor oil. The proportion of the different fats may almost be taken at will, for a transparent soap will always be formed when the three fats are used. When good lathering soaps are to be made, the cocoanut oil will answer.

These soaps can be prepared with or without glycerin, from a charge consisting of:

Cocoanut oil.....	50 per cent.
Tallow .....	30 per cent.
Castor oil.....	20 per cent.
Caustic soda lye of 35° B.	60 per cent.

The cardinal point of success in all these soaps lies principally in effecting a thorough saponification, and when no alcohol is used, patience must be had until it is effected. When alcohol is employed, 1 liter of spirit is mixed with the lye and the mixture is quickly added to the fat, heated to about 75° C. When Ceylon and copra cocoanut oil are used, it is possible to have a thoroughly combined soap as soon as the lye is added. But it is always advantageous to keep the boiler well covered for at least one hour, then gradually apply heat, and await the formation of a paste curd. Whether the lye and fat were thoroughly combined can only be determined after heating. A thoroughly combined soap adheres to the kettle, while one which is not completely combined separates the oil and only enters combination after long continued crutching.

To convert the stock soap into transparent soap, sugar solution is added. When glycerin and alcohol are used,  $\frac{1}{2}$  per cent. distilled water is used for dissolving  $\frac{1}{2}$  per cent. sugar. If, however, neither alcohol nor glycerin is employed, more water is taken for the sugar solution, and the soap is hardened with crystal soda or salt. Water must be added to the fluid soap until it forms a perfect liquid, and shows no more separated curd. With a little experience the proper proportions can readily be determined by the appearance of the glass test, which should be clear and hard.

**Vanilla Soap.**

Lard, with vanilla.....	30 pounds
Cacao butter.....	10 pounds
Palm oil.....	10 pounds
Caustic lye, 36° B.....	26 pounds
Wax .....	2 pounds
Starch .....	2 pounds

Perfume with:

Tincture of vanilla .....	4 ounces
Tincture of musk .....	2 ounces
Tincture of ambergris .....	2 ounces
Oil of rose.....	$\frac{1}{2}$ ounce

Lard with vanilla is prepared by adding the vanilla to the lard, 1 ounce to the pound, keeping it at a moderate heat for some days, then straining, etc.

**Vaseline Soap.**

Animal fat.....	450 parts
Cocoanut oil.....	50 parts
Caustic soda, 36° B.....	250 parts
Common salt.....	100 parts
Vaseline .....	150 parts
Distilled water.....	1,000 parts

Dissolve in the water bath, the fat and oil in the soda lye, add the salt and vaseline, and finally the water. Color and perfume to taste.

**Vaseline Tar Soap.**

Saponify 40 pounds of cocoanut oil and 6 pounds of tar with 22 pounds of lye 40° B. Liquefy 4 pounds of yellow vaseline and stir in the soap, with 1 pound lukewarm water.

**Vaseline Soap.**

Cocoanut oil.....	8 pounds
Vaseline .....	1 pound
Soda lye.....	4 pints
Water .....	$\frac{1}{2}$ pint

Boil until saponified. Add perfume and color to suit.

**Vaseline Soap.**

Cocoanut oil.....	10 pounds
Vaseline, white.....	2 pounds
Lye .....	5 pounds

Melt together and heat until clear.

**Yellow Soap.**

Tallow .....	$1\frac{1}{2}$ pounds
Sal soda.....	$1\frac{1}{2}$ pounds
Rosin .....	56 pounds
Stone lime.....	28 pounds
Palm oil.....	8 ounces
Soft water.....	28 gallons

Put the soda, lime and water into a kettle and boil, stirring well; then let it settle and pour off the lye. In another bottle melt the tallow, rosin and palm oil, having it hot, the lye being also boiling hot. Mix, stirring well, and the work is done.

Tallow and other fats are commonly purified by melting them along with water, passing the mixed fluids through a sieve, and letting the whole cool slowly, when a cake of cleansed fat is obtained. Another plan is to keep the tallow melted for some time along with about 2 per cent. of sulphuric acid largely diluted with water and under constant agitation. Allow the whole to cool slowly. Remelt the tallow with a large quantity of hot water, and wash it well.

**Wash Balls or Savonettes.**

Curd soap, fine.....	3 pounds
Yellow soap, fine.....	2 pounds
Soft water.....	12 ounces
Starch, powdered.....	$1\frac{1}{2}$ pounds

Melt the soaps and water on a water bath, add the starch. When nearly cool, make into balls.

**Wash Balls or Savonettes with Camphor.**

White soap.....	3 pounds
Spermaceti .....	4 ounces
Camphor .....	2 ounces

Melt the soap with a little water on a water bath, stir in the spermaceti and camphor previously melted together. Mix, and make into balls.

**Windsor Soap.**

Hard soap.....	10 pounds
Oil of caraway.....	3 ounces
Tincture of musk.....	1 ounce
Oil of lavender.....	2 drams
Oil of origanum.....	10 drops

Melt the soap and add the perfumes.

**Windsor Soap.**

Curd soap.....	1 pound
Oil of caraway .....	1 dram
Oil of bergamot .....	1 dram

Melt the soap and add the perfume. Brown Windsor soap is made in the same way, but colored.

**Witchhazel Soap.**

Any good toilet soap in which witchhazel water is used in place of plain water and perfumes. It is generally colored green.

**Wool Washing Compound.**

Soda, dried.....	3½ pounds
Powdered soap.....	1 pound
Ammonium chloride.....	1 pound

Mix.

## INSECTICIDES, FLY PAPERS, VERMIN POISONS, ETC.

**Red Ants.**

Powdered borax sprinkled around the infested places will drive them away, as also will powdered cloves. Grease a plate with lard, they will leave sugar to go to it, and then turn them into the fire; cracked nuts will answer the same purpose as the lard. Oil of turpentine run into the cracks with a sewing machine oil can is also serviceable.

**Ants.**

A good preventive for the inroads of ants is a stripe of carbolated petrolatum about half an inch in width drawn about the places frequented.

**Ant Poison.**

Cape aloes.....	1 pound
Water .....	1 gallon

Boil together, and add to the mixture:

Camphor, in small pieces..	6 ounces
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This can be used for other insects by diluting with water and sprinkling through a garden pump or watering can.

**To Exterminate Ants.**

Sprinkle their haunts with quicklime containing a twentieth of its weight of powdered camphor.

**Ants.**

Carbon disulphide poured into their haunts is a sure and speedy remedy.

**Ant Exterminator.**

Borax .....	1 pound
Camphor .....	1 ounce
Cloves .....	1 ounce

Mix well together in fine powder.

**Ants.**

When it is not advisable or practical to use carbon disulphide, the following may be used:

Aloes .....	4 ounces
Cloves .....	4 ounces
Water .....	1 quart

Dissolve the aloes and add the powdered cloves. Powdered cloves is quite effective when necessary to use in the house.

**Bed Bug Poison.**

Corrosive sublimate.....	¼ pound
Ammonium chloride, powdered .....	¼ pound
Water .....	½ gallon
Glycerin .....	4 ounces
Wood alcohol.....	½ gallon

Mix.

**Bed Bug Poison.**

Camphor .....	2 ounces
Oil of turpentine.....	4 ounces
Corrosive sublimate.....	1 ounce
Alcohol .....	16 ounces

Mix.

**Bed Bug Poison.**

Strong mercurial ointment	1 ounce
Soft soap.....	1 ounce
Oil of turpentine.....	16 ounces

Mix.

**Bed Bug Poison.**

Tobacco .....	100 grams
Crude naphthalene.....	100 grams
Oil of melissa, enough.	
Benzine .....	1 kilogram

Extract the tobacco by macerating for 5 days in the benzine; strain and dissolve the other ingredients in the filtrate.

**Bed Bug Destroyer.**

Tincture of tobacco.....	200 parts
Boric acid.....	6 parts
Carbolic acid.....	6 parts
Salicylic acid.....	12 parts
Oil of Indian balm.....	1 part

Mix.

Tincture of tobacco for this purpose may be made with denatured alcohol (1:20).

**Bed Bug Destroyer.**

The best bed bug destroyer is benzine, plain or mixed with oil of turpentine. Oil of mirbane may be added to improve the odor, 1 ounce to the gallon.

**Bed Bug Destroyer.**

Camphor .....	2 ounces
Corrosive sublimate.....	1 ounce
Oil of turpentine.....	4 ounces
Denatured alcohol.....	1 gallon
Water .....	1 gallon

Mix and dissolve.

**Bed Bug Destroyer.**

Camphor .....	2 ounces
Corrosive sublimate.....	2 ounces
Kerosene .....	1 gallon
Denatured alcohol.....	1 gallon
Oil of turpentine.....	1 pint

Mix and dissolve.

**Bed Bug Destroyer.**

Ammonium chloride.....	4 ounces
Corrosive sublimate.....	4 ounces
Denatured alcohol.....	1 gallon
Water .....	1 gallon
Oil of mirbane.....	2 ounces

Mix and filter through talc.

**Beetles.**

Red oxide of lead.....	1 pound
Sugar, powdered.....	1 pound
Flour .....	1 pound

Mix. Sprinkle over their holes.

**Beetles.**

Borax, powdered.....	2 pounds
Barium carbonate.....	1 pound

Mix. Sprinkle around their haunts.

**Beetles.**

Powdered chocolate.....	1 pound
Sugar .....	3 pounds
Paris green.....	¼ pound

Mix well.



**Beetle Powder.**

Borax ..... 1 pound  
 Bath brick..... 1 pound  
 Sugar, powdered..... 1 pound  
 Mix. Sprinkle around their haunts.

**Caterpillars.**

Rue,  
 Wormwood,  
 Tobacco, of each, equal parts.

Make a strong decoction in water and sprinkle it on the leaves and young branches every morning and evening during the time the fruit is ripening.

**Caterpillars.**

Infusion of tobacco (1 ounce to 1 pint of boiling water) with 2 per cent. carbolic acid, is a good remedy against caterpillars.

**Caterpillars.**

Iron sulphate..... 1 ounce  
 Water ..... 1 gallon  
 Mix and dissolve. Use in watering pot.

**Caterpillars.**

Burnt alum, sprinkled from cans, is a good destroyer.

**Carpet Bugs.**

Sulphur, in fine powder, is said to be a sure preventive against the ravages of carpet bugs or buffalo moths.

**Carpet Bugs.**

Common salt sprinkled on the floor under the edges of the carpets.

**Carpet Bugs.**

Wipe the carpets with a cloth dipped in benzine. Air the room well for an hour afterwards.

**Cockroach Powder.**

A mixture of the following substances strewed around the places infested will drive away every one of the pests: 2 parts naphthalene, 200 parts powdered angelica root, 50 parts melilot, 5 parts oil of eucalyptus.

**Cockroach Powder.**

Borax ..... 10 ounces  
 Sugar ..... 3 ounces  
 Cocoa powder..... ½ ounce  
 Mix and sprinkle where the insects are.

**Roach and Moth Exterminator.**

Thymol ..... 2 parts  
 Salicylic acid..... 2 parts  
 Alcohol ..... 200 parts  
 Dissolve and perfume the mixture with Oil of lemon..... 1 part

This preparation makes no stain and kills the vermin immediately. The odor is not unpleasant and is quickly removed by airing the room.

**Cockroaches and Water Bugs.**

Borax sprinkled around their haunts will speedily dispel them.

**Cockroaches.**

Red lead..... 1 pound  
 Indian meal..... 1 pound  
 Molasses ..... 1 pound  
 Mix and make a paste. A good roach poison.

**Cockroaches, etc.**

Borax ..... 9 ounces  
 Starch ..... 2½ ounces  
 Cocoa ..... 1 ounce

Mix.

**Cockroaches, etc.**

Angelica, in fine powder. 1 pound  
 Oil of eucalyptus..... 1 ounce  
 Mix well and sift. A quick roach dispeller.

**Cockroaches.**

Chamomile ..... 2 ounces  
 Borax ..... 12 ounces  
 Insect powder..... 2 ounces  
 Plaster of paris..... 1 ounce  
 Sulphur ..... 3 ounces  
 Mix. Sprinkle around their haunts.

**Cockroaches.**

Sugar, powdered..... 2 pounds  
 Chocolate, powdered..... ½ pound  
 Paris green..... ½ pound  
 Mix well. The roaches will eat this readily and soon disappear.

**Roach Paste.**

Flour ..... ½ pound  
 Paris green ..... 1 ounce  
 Molasses ..... ½ pound  
 Mix and make into a paste.

**Roach Paste.**

Phosphorated oil..... 1 pound  
 Flour ..... 1 pound  
 Sugar ..... 1 pound  
 Molasses ..... 1 pound  
 Mix and make into a paste.

**Kerosene Emulsion as an Insecticide.**

	Per cent.
Kerosene .....	2 gallons   67
Common soap or whale oil soap.....	½ pound   33
Water .....	1 gallon   33

Heat the solution of soap and add it boiling hot to the kerosene. Churn the mixture by means of a force pump and spray nozzle for 5 or 10 minutes. The emulsion, if perfect, forms a cream which thickens upon cooling and should adhere without oiliness to the surface of glass. For use against scale insects dilute one part of the emulsion with nine parts of water. For most other insects dilute one part of the emulsion with fifteen parts of water. For soft insects like plant lice the dilution may be carried to from 20 to 25 parts of water.

This insecticide acts by contact and is applicable to all non-masticating insects (sucking insects, such as the true bugs and especially plant lice and scale insects) and also to many of the mandibulate insects when the use of arsenites is not advisable.

**Fleas.**

Place common sticky fly paper on the floors of the room infested and in the center of each sheet a small piece of fresh meat. The fleas will jump towards the meat and adhere to the paper, and even a badly infested house can be rid of the pests within a day or so.

**Fleas on Dogs, Horses and Cattle.**

Beef gall,  
 Oil of camphor,  
 Oil of pennyroyal,  
 Extract of gentian,  
 Spirit of wine, equal parts,  
 Mix.

**Fleas on Dogs, etc.**

Oil of pennyroyal..... 1 ounce  
 Denatured alcohol..... 8 ounces  
 Water ..... 8 ounces  
 Mix. Wash the dog with the liquid.

**Fleas on Dogs, etc.**

Soft soap.....	1 pound
Tar .....	$\frac{1}{4}$ pound
Denatured alcohol.....	$\frac{1}{4}$ pint

Dissolve the tar in the alcohol and mix with the soap.

**Fleas on Dogs, etc.**

Soft soap.....	4 ounces
Creolin .....	$\frac{1}{2}$ ounces
Alcohol .....	10 ounces
Water .....	20 ounces

Dissolve the soap and creolin in the alcohol and add the water slowly.

**Fleas on Dogs, etc.**

Oil of cloves.....	4 ounces
Denatured alcohol.....	4 pints
Water .....	2 pints

Mix. Wash the dog with the liquid.

**For Furs.**

Carbolic acid.....	6 fl. drams
Oil of cloves.....	3 fl. drams
Lemon peel.....	3 fl. drams
Oil of mirbane.....	3 fl. drams
Alcohol .....	1 quart

Dissolve and mix. The articles are moderately sprinkled with the fluid. One sprinkling will suffice for the summer, provided they are stored in closed boxes or closets, but clothes in storerooms will require to be sprinkled twice.

**Fly and Mosquito Bane.**

Expressed oil of bay....	10 parts
Oil of eucalyptus.....	20 parts
Ether .....	20 parts
Alcohol .....	70 parts

Dissolve the expressed oil of bay in the ether, and the oil of eucalyptus in the alcohol. Mix the two solutions, and filter rapidly in a covered funnel. This compound may be used for domestic animals as well as for man, or it may be placed about the house.

**Fly Lotion.**

Quillaja bark, in coarse powder .....	1 ounce
Boiling water.....	2 pints
Infuse for an hour, strain and add:	
Corrosive sublimate.....	$\frac{1}{2}$ ounce
Hydrochloric acid.....	$\frac{1}{2}$ ounce
Turpentine .....	5 ounces
Spirit of tar.....	5 ounces

Shake well together.

To prevent the fly striking, and for maggots: Mix two tablespoonfuls with a wine-bottle of cold water.

To kill lice.—Mix three tablespoonfuls with a wine bottle of cold water, and rub on with a brush.

For mange.—Mix four tablespoonfuls with a wine bottle of cold water, and rub the mixture in well with a brush every day until cured.

**Fly and Mosquito Oil.**

For keeping flies and mosquitoes away from horses try a mixture containing 8 ounces lard oil, 8 ounces oil of tar, 4 ounces each of glycerin, oil of pennyroyal and spirit of camphor, and 2 ounces carbolic acid.

**For Screw Worms.**

The commercial carbolic or cresylic acid soaps are extensively applied for this purpose and designated by various names as screw worm ointments. Kerosene oil emulsion has also been used with success by injecting. The following is the usual formula:

Kerosene .....	1 gallon
Water .....	$\frac{1}{2}$ gallon
Whale oil soap.....	4 ounces

Dissolve the soap in the water and bring to a boil, remove from fire and add to the coal oil, then churn until emulsified. This has also been used with good effect for sore-head of poultry.

**Application for Cattle and Horses.**

Fish oil.....	$\frac{1}{2}$ gallon
Paraffin oil.....	$\frac{1}{2}$ gallon
Crude carbolic acid.....	8 ounces

Mix. To be well shaken before applying.

**Flies, Spray for Rooms.**

Eucalyptol .....	1 ounce
Bergamot oil.....	2 drams
Acetic ether .....	1 ounce
Cologne water.....	5 ounces
Denatured alcohol.....	2 ounces
Water .....	2 pints

Mix. To drive out flies, spray around the room.

**Fly Poison.**

Infusion quassia.....	1 pint
Brown sugar.....	4 ounces
Ground pepper.....	2 ounces

Mix and place in small shallow dishes.

**Fly Poison.**

Fowler's solution.....	1 pint
Syrup .....	1 pint

Mix and place in small shallow dishes.

**Fly Poison.**

Sodium arsenate.....	1 ounce
Water .....	1 pint
Molasses .....	1 pint

Mix and dissolve. Place in small dishes.

**Poison Fly Paper.**

Make a solution of 2 parts potassium arsenate or sodium arsenate, 4 parts white sugar, 40 parts water. Saturate stout unsized paper in this solution, then dry. To use the paper moisten it with water and place in saucers. Great care should be taken with this paper, as it is poisonous.

**Cobalt Fly Paper.**

Quassia chips.....	150 parts
Cobalt chloride.....	10 parts
Tartar emetic.....	2 parts
Tincture of capsicum.....	80 parts
Water .....	400 parts

Boil the quassia until the liquid is reduced one-half, strain, add the other ingredients. Saturate common absorbent paper with the solution and dry. The paper is used in the ordinary way.

**Poison Fly Paper.**

Arsenous acid.....	6 av. ounces
Boiling water.....	1 gallon
Sodium carbonate.....	8 av. ounces

Dissolve the arsenous acid, previously reduced to a powder, in the boiling water, with sodium carbonate and, while hot, immerse sheets of coarse unsized paper in the solution. After they are saturated, drain and hang on lines to dry. Mark each sheet "poison." Glucose or sugar may be added to make it more attractive to the flies. It must be remembered that the paper will poison any animal life, so it should be handled as any other poison.

The paper will keep any length of time as arsenic will not spoil.

**Sticky Fly Paper.**

The ordinary method is to paint heavy unsized manilla paper with common glue, using an ordinary flat paint brush, and allowing to dry. Then follow with one or two coats of the following mixture, made by melting over a gentle fire, stirring constantly:

Castor oil, 4 ounces; resin, 12 ounces. Another mixture, which is spread warm upon unsized paper, is castor oil, 8 ounces; resin, 24 ounces; sugar, 4 ounces. This latter is probably the better one as being more attractive to the flies.

**Sticky Fly Paper.**

Gum thus ..... 4 ounces  
 Linseed oil.....1½ ounces  
 Honey ..... 1 ounce

Melt and mix well, spread over sized paper when hot.

**Fly Powder.**

Powdered pepper ..... 1 ounce  
 Powdered quassia ..... 1 ounce  
 Powdered sugar ..... 2 ounces  
 Starch ..... 15 ounces

Mix. Put in small dishes.

**Fly Powder.**

Eucalyptol ..... 1 ounce  
 Orris root..... 4 ounces

Reduce the dry substances to powder, incorporate the eucalyptol, mix well and put in sprinkler top boxes.

**Fly Powder.**

Eucalyptol ..... 1 ounce  
 Chalk ..... 2 ounces  
 Starch ..... 17 ounces

Mix. Cover hands and face.

**Insect Bites.**

Salicylic acid..... 1 part  
 Flexible collodion..... 19 parts

Mix.

**Insect Bites.**

Corrosive sublimate..... 1 part  
 Flexible collodion.....1,000 parts

Mix.

**Insect Bites.**

Ammonium carbonate..... 90 parts  
 Camphor ..... 2 parts  
 Boric acid..... 8 parts

Mix. As a binding material, a dilute mucilage may be employed.

**Insect Bites.**

Oil of bay..... 1 ounce  
 Acetic ether..... 1 dram  
 Oil of cloves..... ½ dram  
 Oil of eucalyptus..... ½ dram

Mix and apply.

**Insect Bites.**

Yellow wax..... 8 ounces  
 Oil of bay..... 1 pint  
 Oil of thyme..... 1 ounce  
 Oil of eucalyptus..... 1 ounce

Melt and mix.

**Insect Bites.**

Oil of valerian..... 1 dram  
 Eucalyptol ..... 1 dram  
 Vaseline ..... 4 ounces

Mix thoroughly and apply.

**Insect Bites.**

Fluidextract of rhus toxicodendron ..... 1 dram  
 Water ..... 8 ounces

Mix. Apply to the sore.

**Insect Bites.**

Carbolic acid..... 15 grains  
 Glycerin ..... ½ ounce  
 Rose water, enough to make ..... 4 ounces

Mix. Apply to the sore.

**Insect Bites.**

Ipecac, powdered..... 1 dram  
 Alcohol ..... 1 ounce  
 Ether ..... 1 ounce

Mix. Apply to sores.

**Insect Bites.**

Menthol ..... 1 ounce  
 Alcohol ..... 8 ounces

Mix and dissolve.

**Insect Bites.**

Stronger ammonia water.. 1 ounce  
 Cologne water..... ½ ounce

Mix. Apply one or two drops by means of an applicator.

**Insect Powder.**

Iron sulphate..... 32 parts  
 Licorice root..... 33 parts  
 Quassia ..... 8 parts  
 Black pepper..... 32 parts  
 Linseed meal..... 56 parts  
 Fennel ..... 8 parts  
 Kummel ..... 8 parts

Powder thoroughly, and then thoroughly mix the whole.

**Insects in Drugs.**

The cure for their foraging is the application of small quantities of chloroform or carbon disulphide, and on exposure of the drug to the atmosphere in a few moments the odor is lost.

**Insect Powder.**

Insect powder..... 8 ounces  
 Borax, powdered..... 8 ounces  
 Oil of pennyroyal..... 2 drams

Mix thoroughly.

**Insect Powder.**

Insect powder ..... 8 ounces  
 Borax ..... 8 ounces  
 Sulphur ..... 4 ounces  
 Oil of eucalyptus..... 2 drams

Mix thoroughly.

**Insect Powder.**

Insect powder..... 14 ounces  
 Quassia, powdered..... 6 ounces  
 Hellebore ..... 2 ounces

Mix.

**Insecticide for Plants.**

Soft soap..... 4 parts  
 Tobacco ..... 6 parts  
 Fusel oil..... 5 parts  
 Methylic alcohol..... 20 parts  
 Water, sufficient to make 1,000 parts

Boil the tobacco with an equal weight of water for half an hour, replacing the water as it is dissipated on boiling. Then strain. Mix this liquid extract with the other ingredients, and add enough water to make 1,000 parts. Before use, the mixture is well shaken up, and then applied by means of a syringe throwing a fine spray to the affected plants.

**Insecticide for Agriculturists.**

The following is one of the best preparations known for killing aphids, mealy bug, cotton blight and other insects. It is made as follows:



Sulphurated potash.....	1 pound
Soft soap.....	4 pounds

Rub the sulphurated potash as fine as possible, and mix intimately with the soap. A large teaspoonful of this should be mixed with each gallon of soft water, and the plants should be well sprayed with the solution.

#### Insecticides for Plants.

Sodium arsenate.....	4 ounces
Lead acetate.....	12 ounces
Molasses .....	2 pounds
Soft water.....	100 gallons

Mix and dissolve. Use in a watering can.

#### Insecticide for Plants.

Sodium arsenate.....	1 ounce
Lead acetate.....	3 ounces
Molasses .....	2 pounds
Soft soap.....	2 pounds
Water .....	16 gallons

Mix and dissolve.

#### Insecticide for Plants.

Carbolic acid.....	1 gallon
Soft soap.....	3 pounds
Water .....	50 gallons

Mix. Useful for spraying trees.

#### Insecticide for Plants.

Copper sulphate.....	6 ounces
Sodium carbonate.....	8 ounces
Water .....	10 gallons

Mix and dissolve.

#### Insecticide for Plants.

Formaldehyde .....	10 ounces
Water .....	10 gallons

Mix. Useful for preventing strips and smut in seeds. Dip the seed in the solution for 5 minutes.

#### Insecticide for Plants.

Sulphur .....	3 pounds
Lime .....	3 pounds
Water .....	6 gallons

Boil till reduced to 2 gallons, and dilute to 100 gallons. Excellent for plant-mites, spiders, etc.

#### Insecticide for Plants.

Paris green.....	1 pound
Lime .....	2 pounds
Water .....	150 to 200 gallons

Mix. Keep well stirred while spraying.

#### Insecticide (Bordeaux Wash).

Copper sulphate.....	6 pounds
Quicklime .....	4 pounds
Water .....	25 gallons

Dissolve the sulphate in half the water, slake the lime in the other half, mix the two solutions.

#### Insecticide (Cavazza's Wash).

Copper sulphate.....	1 pound
Lime water.....	20 gallons

Mix and dissolve.

#### Insecticide for Greenhouse Plants.

Terebene .....	2 ounces
Spirit of tar.....	1 ounce
Soft soap.....	4 ounces
Denatured alcohol.....	6 ounces

Mix and dissolve. Use half a teacupful to a pail of water for spraying.

#### Lice on House Plants.

Take some of the common fine-cut smoking tobacco, strong, and sprinkle it over the top of the earth about the plant, and keep the plant well watered. The strength of the tobacco now passes through the earth and about the roots, and is just as sure to kill all creeping things as it is used and is a great benefit to the plants.

#### Lice on Plants.

Green soap.....	5 ounces
Tobacco extract.....	5 ounces
Tincture of quassia.....	5 pints
Water .....	3 pints
Copper sulphate.....	5 ounces

Mix and dissolve.

#### Lice on Plants.

Hellebore, powdered.....	1 pound
Henbane, powdered.....	½ pound
Insect powder.....	2 pounds

Mix.

#### Lice on Plants.

Salicylic acid.....	1 ounce
Soft soap.....	2 ounces
Quassia .....	10 ounces
Denatured alcohol.....	5 pints

Make a tincture and use as a spray.

#### Powder Against Lice.

Stavesacre seed, powdered	2 parts
Cevadilla seed, powdered.	2 parts
White hellebore, powdered	1 part

Mix well.

#### Lice on Human Beings.

Borax .....	1 ounce
Glycerin .....	1 ounce
Infusion of quassia (1 in 5).....	15 ounces

Mix. Apply once daily.

#### Lice on Human Beings.

Larkspur seed, powdered.	1 pound
Acetic acid.....	8 ounces
Alcohol .....	1 pint
Water .....	1 gallon

Macerate for 8 days, shaking often, then filter. Apply once a day.

#### Lice on Human Beings.

Naphthalene .....	4 drams
White wax.....	1½ drams
Olive oil.....	6 drams
Petrolatum .....	6 drams
Oil of bergamot.....	10 drops
Oil of cloves.....	5 drops
Oil of cassia.....	5 drops

Mix and make a salve. Apply once daily.

#### Mosquitoes.

Oil of bay laurel emulsified with soap and with some creolin added is a good application for animals.

#### Mosquitoes.

An insecticide of excellent utility is 1 part of solution of sodium borosalicylate and 50 parts decoction of quassia.

#### Mosquitoes.

Take of gum camphor a small piece and evaporate it by placing it in a tin vessel over a lamp or candle, taking care that it does not ignite. The smoke will soon fill the room and expel the mosquitoes.

**Mosquitoes.**

Oil of pennyroyal, scattered about in small quantities.

**Mosquito Oil.**

Carbolic acid.....	2 ounces
Oil of pennyroyal.....	4 ounces
Spirit of camphor.....	4 ounces
Oil of tar.....	8 ounces
Glycerin .....	4 ounces
Lard oil.....	8 ounces

Mix and use to keep flies off horses.

**Anti-Mosquito Powder.**

Eucalyptol .....	5 parts
Talcum .....	10 parts
Corn starch.....	85 parts

Mix. Especially adapted for parties camping out. It may be rendered more effective by replacing 50 per cent or more of the starch by naphthalene.

**Mosquitoes.**

A sponge moistened with spirit of camphor and fastened to the top of the bed will give relief.

**Mosquitoes.**

Insect powder burned in a room two or three times a day will drive them away.

**Mosquitoes.**

Naphthalene .....	1 ounce
Talcum .....	2 ounces
Starch .....	16 ounces
Oil of pennyroyal.....	2 drams

Reduce to fine powder and well mix. Rub on the exposed parts of the body.

**Mosquitoes.**

Make a paste with mucilage of tragacanth of 500 parts charcoal in powder, 60 parts saltpetre, 40 parts carbolic acid, 250 parts insect powder. Divide into suitable sized cones and use as fumigating pastilles.

**Mosquitoes.**

One hundred parts each of benzoin and tolu balsam, 500 parts charcoal in powder, 150 parts insect powder, 50 parts saltpetre, made into a paste and employed as directed in the preceding formula.

**Mosquitoes, Fumigating Pastilles.**

Wood charcoal.....	1 pound
Potassium nitrate.....	2 ounces
Carbolic acid.....	1½ ounces
Persian insect powder.....	8 ounces
Mucilage of tragacanth, sufficient quantity.	

To form pastilles as directed in the preceding formula.

**Mosquito Bites.**

Naphthalene .....	1 dram
Oil of lavender.....	2 drams
Alcohol .....	2 ounces

Mix and rub on the sore spots.

**Mosquito Bites.**

Eucalyptol .....	1 ounce
Acetic ether .....	½ ounce
Eau de cologne.....	4 ounces
Tincture of insect powder (1:5).....	5 ounces

Mix. Rub on the sore spots. One part of this to 6 or 8 of water is good for sponging the body.

**Anti-Insect Cubes, For Moths, Bugs, Fleas, etc.**

Melt together on a water bath 4 ounces paraffin, 2 drams crystallized carbolic acid,

1 dram naphthalene, ½ grain musk, 4 drams powdered camphor. Cast into squares and wrap in tin foil. Placed in a bed or wrapped in a night dress, they will protect the sleeper from all species of the red rover. In a sick room they are most useful, purifying and scenting it. The musk may be replaced by oil of lavender if desired.

**Moth Cake.**

Cedar dust.....	1 ounce
Camphor .....	1 ounce
Cassia powder.....	1 ounce
Orris powder.....	1 ounce
Oil of cedar.....	15 minims
Gum myrrh, powdered....	¼ ounce
Curd soap.....	¼ ounce

Mix, adding sufficient alcohol to mass, and press into cakes.

**Moth Paper.**

Carbolic acid.....	1 part
Ceresin .....	1 part
Naphthalene .....	2 parts

Melt and immerse in the melted liquid pieces of bibulous paper. Dry on metallic plates.

**Moth Paper.**

Carbolic acid.....	1 ounce
Eucalyptol .....	1 ounce
Alcohol .....	4 ounces
Menthol .....	½ ounce

Mix and dissolve. Immerse in the liquid pieces of bibulous paper. Dry in the air and preserve wrapped in wax paper.

**Moth Paper.**

Carbolic acid.....	1 ounce
Camphor .....	1 ounce
Chloroform .....	½ ounce
Alcohol .....	4 ounces

Mix and prepare as directed in the preceding.

**Moth Powder.**

Pyrethrum .....	8 ounces
Camphor .....	8 ounces
Colocynth .....	8 ounces
Oil of lavender.....	½ ounce

Reduce the dry substances to powder, incorporate the oil and mix well.

**Moth Powder.**

Lupulin .....	1 dram
Scotch snuff.....	2 ounces
Gum camphor.....	1 ounce
Black pepper.....	1 ounce
Cedar sawdust.....	4 ounces

Mix thoroughly. Put in paper between fur and clothes.

**Moth Powder.**

Naphthalene .....	2 ounces
Camphor .....	4 ounces
Valerian .....	5 ounces
Tobacco .....	2 ounces
Oil of cinnamon.....	2 drams
Oil of eucalyptus.....	1 ounce

Reduce the dry substances separately to a fine powder, mix thoroughly and incorporate the oils. Use like the preceding.

**Moth Solution.**

Carbolic acid.....	1 ounce
Camphor .....	1 ounce
Benzine, enough to make.	1 pint

Dissolve the camphor and carbolic acid in the benzine. Apply by saturating a piece of blotting paper, or use the liquid in the form of spray with an atomizer.

**Moths, Tincture to Preserve Clothing and Furs From.**

Camphor .....	1 ounce
Cayenne pepper.....	1 ounce
Alcohol .....	8 ounces

Mix. Macerate several days, then filter. With this tincture the furs or clothing are sprinkled over and rolled up in sheets.

**Moth Tincture with Patchouli.**

Oil of patchouli.....	$\frac{1}{2}$ dram
Oil of cloves.....	$\frac{1}{2}$ ounce
Oil of bergamot.....	$\frac{1}{2}$ ounce
Carbolic acid.....	1 ounce
Alcohol, enough to make.	1 pint

Mix.

**Moth Tincture.**

Carbolic acid.....	$\frac{1}{2}$ ounce
Camphor .....	1 ounce
Oil of cloves.....	2 drams
Oil of lemon.....	2 drams
Alcohol, enough to make.	1 pint

Mix and dissolve.

**Moth Tincture.**

Naphthalene .....	1 ounce
Carbolic acid.....	1 ounce
Menthol .....	$\frac{1}{2}$ ounce
Tincture of capsicum.....	5 ounces
Oil of lemongrass.....	$\frac{1}{2}$ ounce
Alcohol .....	$2\frac{1}{2}$ pints

Mix, dissolve and filter. Use as a spray in an atomizer.

**Moth Pastilles.**

Camphor .....	$\frac{1}{2}$ ounce
Black pepper.....	1 ounce
Absinthe .....	1 ounce
Patchouli .....	2 drams
Essence of lavender.....	2 drams
Essence of cloves.....	1 dram
Paraffin .....	10 ounces

Melt the paraffin, incorporate the other ingredients, and make into pastilles to be burned in closets, etc.

**Nursery Insecticide.**

Vinegar of cantharides	
or	
Vinegar of stavesacre....	3 drams
Glycerin .....	1 ounce
Infusion of quassia (1 to 7), enough to make.....	1 pint

Mix.

**Mouse and Rat Poison.**

Strychnine sulphate.....	1 dram
Milk sugar.....	1 dram
Prussian blue.....	2 drams
Arsenic .....	2 drams
Wheat flour.....	8 ounces

Rub up the strychnine and milk sugar together, add the Prussian blue and arsenic, and finally add the flour, and mix thoroughly. When required for use, moisten and make a dough, divide into small pellets and dry.

**Miller's Rat Poison.**

Oatmeal .....	1 pound
Nux vomica, fine powder.	1 ounce
Oil of anise.....	5 drops
Tincture of asafoetida.....	5 drops

Mix.

**Mineral Rat Poison.**

Barium carbonate.....	4 ounces
Sugar .....	6 ounces
Oatmeal .....	6 ounces
Oil of anise.....	5 minims
Oil of caraway.....	3 minims

Mix thoroughly.

**Rat Poison.**

Ground malt.....	1 pound
Powdered cantharides.....	2 ounces
Musk .....	1 grain
Oil of rhodium.....	6 drops
Oil of caraway.....	6 drops
Brown sugar.....	2 ounces

Mix. A small quantity to be incorporated with butter and spread on bread.

**Rough on Rats.**

This preparation consists principally of arsenic, colored with lampblack or similar substance. A good substitute, but one containing far less arsenic, is:

White arsenic.....	1 ounce
Wheat flour.....	9 ounces
Lard .....	9 ounces
Lampblack .....	$\frac{1}{2}$ ounce
Oil of anise.....	1 dram

Mix and make into globules.

**Rats and Mice.**

Drop a few drops of fresh oil of rhodium on the bottom of the trap. Rats and mice cannot resist this attraction.

**Rats and Mice.**

Cantharides .....	1 ounce
Sugar .....	2 ounces
Ground malt.....	16 ounces
Musk .....	1 grain
Oil of rhodium.....	6 drops
Oil of caraway.....	6 drops

Mix and make into pellets of 5 to 10 grains.

**Rat Poison.**

Barium carbonate.....	1 ounce
Barley flour.....	$\frac{1}{4}$ ounce
Glycerin .....	$\frac{1}{2}$ ounce
Old cheese.....	2 ounces

Mix. Divide into 100 tablets and sprinkle with flour.

**Rat Poison.**

Strychnine sulphate.....	1 dram
Sugar of milk.....	3 drams
Prussian blue.....	5 grains
Sugar .....	$\frac{1}{2}$ ounce
Oat flour.....	$\frac{1}{2}$ ounce

Triturate the first three ingredients in a mortar for five minutes, then add the sugar and flour. Mix well.

**Rat Poison.**

White arsenic .....	1 ounce
Ultramarine .....	10 grains
Corn flour.....	$\frac{1}{2}$ ounce
Sugar .....	2 drams

Mix in the same manner as in the preceding. From 10 to 20 drops of tincture of asafoetida may be added.

**Phosphorus Paste.**

Introduce 1 dram of phosphorus into a Florence flask, and pour over it 1 ounce of alcohol. Immerse the flask in hot water until the phosphorus is melted, then put a well-fitting cork into the mouth of the flask, and shake briskly until cold. The phosphorus is now reduced to a finely-powdered state. After pouring off the alcohol, mix the phosphorus in a mortar with  $1\frac{1}{2}$  ounces of lard; 5 ounces of flour and  $1\frac{1}{2}$  ounces of brown sugar, previously mixed together, are now added, and the whole made into a paste with a little water. It is said there is no danger whatever of spontaneous ignition either during or after the preparation of this paste.



**Phosphorus Rat Poison.**

Phosphorus .....	1 ounce
Water (100° F.).....	16 ounces
Molasses .....	8 ounces
Lard .....	16 ounces
Oatmeal, enough to form a paste.	

Prepare like the preceding.

**Phosphorus Rat Poison.**

Phosphorus .....	75 grains
Water, hot.....	6 drams
Butter, fresh.....	1 ounce
Corn starch, fine.....	1 ounce

Reduce the phosphorus to fine globules by shaking vigorously with the water contained in a suitable bottle, taking care to have the hand protected with a glove, or the bottle wrapped in a cloth, for fear of accident. When nearly cool, add the molasses, and then the liquefied lard. Finally, incorporate with the oatmeal or flour to form a stiff paste.

**Phosphorus Paste.**

The following may be kept unchanged for a considerable length of time: Five grams of phosphorus are dissolved in 20 grams of boiling hot water, and afterwards mixed with 30 grams of castor oil, fresh butter or oleic acid; 30 to 40 grams of triturated arrowroot starch are then stirred into the mass, and so much boiling water added as will completely soak the starch, and form the whole into a homogeneous paste.

**Sulphur-Phosphorus Paste.**

Phosphorus .....	1 ounce
Sublimed sulphur.....	¼ ounce
Water, enough to cover.	

Pour upon these as much carbon disulphide as will dissolve the sulphur and phosphorus, then add:

Powdered mustard.....	½ ounce
Water .....	12 ounces
Powdered sugar.....	14 ounces
Wheat meal.....	16 ounces

Mix and make into a stiff paste.

**Rat Poison.**

Make into a stiff mass with wheat meal, 2 parts of squills, bruised, and 3 parts of finely-chopped bacon. Bake in small cakes, and put down for the rats to eat.

**Trappers' Bait for Wild Animals (Fetid Bait).**

Oil of rhodium, either alone or in combination with other volatile oils, such as savine, anise, etc., has been used as a scent by trappers for attracting wild animals. Of the many scents and combinations tested "fetid bait" has proved most successful, especially in attracting wolves and coyotes to the traps. It is made as follows: Place half a pound of raw beef or venison in a wide-mouthed bottle and let it stand in a warm place (but not in the sun) for two to six weeks, or until it is thoroughly decayed and the odor has become as offensive as possible. When decomposition has reached the proper stage add a quart of sperm oil or any liquid animal oil. Lard may be used, but prairie dog oil is better. Then add 1 ounce of tincture of Siberian musk, or Tonguin musk. If this cannot be procured, use in its place 1 ounce of dry, pulverized castoreum (beaver castor), or 1 ounce of the common musk sold for perfumery. Mix well and bottle securely until used. After setting the trap apply the scent with a stick or straw or by pouring from the

bottle to the grass, weeds, or ground on the side of the trap opposite that from which the wolf would naturally approach. Never put scent on the trap, as the first impulse of the wolf after sniffing the scent is to roll on it. This bait is also said to be very attractive to horses and cattle, which are sure to tramp over and paw out the traps if set where they can get at them.

**To Preserve Stuffed Animals.**

Lime, air-slaked, in fine powder .....	2 ounces
Tobacco ashes, sifted.....	1 ounce
Alum .....	1 ounce

Mix and rub thoroughly into the flesh side of the skins to be stuffed.

**To Preserve Stuffed Animals.**

Ammonium chloride.....	1 ounce
Burnt alum.....	½ ounce
Tobacco ashes.....	3½ ounces
Aloes .....	25 ounces

Pulverize and mix. Use as in the preceding.

**To Preserve Stuffed Animals.**

Camphor .....	2 ounces
Insect powder.....	2 ounces
Black pepper.....	1 ounce
Sulphur .....	4 ounces
Alum .....	3 ounces
Tobacco powder.....	3 ounces

Mix. Use as in the preceding.

**Trees, to Protect from Climbing Insects.**

Tallow .....	7 pounds
Palm oil .....	5 pounds

Melt together and smear around the trunk of the tree.

**Trees, to Protect.**

Tar .....	5 pounds
Rosin .....	2 pounds
Palm oil.....	4 pounds

Melt together, and apply as directed in the preceding.

**Ticks on Cattle.**

Try a mixture of benzine, 10 parts; water, 85 parts; soap, 5 parts. Keep the benzine away from the fire, as it is highly combustible. Or mix, by heat, common soap with water and crude carbolic acid and apply to the cattle.

**Vermin Killer.**

Strychnine .....	1 dram
Arsenic .....	1 dram
Prussian blue.....	5 grains
Sugar .....	½ ounce
Wheat flour.....	½ ounce

Mix and make into a paste with molasses.

**Killing Worms in Flower Pots.**

A strong mixture of ground mustard in water applied to the surface. This brings them to the surface, where they may be killed.

**Killing Worms in Flower Pots.**

A solution of sulphate of lime has been successfully employed.

**Killing Worms in Flower Pots.**

Corrosive sublimate.....	2 ounces
Ammonium chloride.....	4 ounces

Dissolve in a pint of boiling water and when cold add the solution to 2 gallons of cold water.

## DISINFECTANTS, ANTI-SEPTICS, DEODORIZERS, ETC.

### Disinfecting Houses, Closets, etc.

Any of the following powders or liquids may be used for disinfecting purposes, by scattering or sprinkling them about the premises. For sick rooms and living apartments, those of a pleasant odor are naturally preferred to the strong-smelling ones. In cleaning sinks, closets and waste pipes, the powders should always be dissolved in boiling water and the solution used in a boiling state.

#### Disinfectant.

Crude carbolic acid.....	2 pounds
Slaked lime.....	3 pounds
Turf mold.....	5 pounds

Mix. This is the so-called Dieterich disinfecting powder.

#### Disinfectant.

Iron sulphate.....	3 parts
Slaked lime.....	3 parts
Turf mold.....	4 parts

Mix. This is especially recommended for privy vaults.

#### Disinfectant.

Iron sulphate.....	1 pound
Plaster of paris.....	1 pound
Crude carbolic acid.....	1 ounce

Mix.

#### Disinfectant.

Iron sulphate.....	5 pounds
Copper sulphate.....	1 pound
Crude carbolic acid.....	1 pound
Infusorial earth.....	10 pounds

Powder fine and mix. A good general disinfectant for gardens, stables, and outhouses.

#### Disinfectant.

Iron sulphate.....	5 pounds
Plaster of paris.....	$\frac{1}{2}$ pound
Calcium sulphate.....	$\frac{1}{2}$ pound
Infusorial earth.....	$\frac{1}{2}$ pound

Powder and mix.

#### Disinfectant.

Slaked lime.....	10 pounds
Coal tar.....	$2\frac{1}{2}$ pounds
Infusorial earth, sufficient to make a dry powder.	

Mix.

#### Disinfectant.

Quicklime .....	70 parts
Charcoal .....	10 parts
Crude carbolic acid.....	5 parts
Zinc chloride.....	10 parts
Infusorial earth.....	5 parts

Powder and mix.

#### Disinfectant.

Calcium sulphate.....	3 pounds
Quicklime, in powder.....	2 pounds
Magnesia .....	2 pounds
Crude carbolic acid.....	3 pounds
Infusorial earth.....	3 pounds

Mix.

#### Disinfectant Mixtures.

Crude carbolic acid.....	1 pound
Iron sulphate.....	$\frac{1}{2}$ pound
Slaked lime.....	3 pounds
Calcium sulphate.....	15 pounds
English red, sufficient to color.	

Powder and mix.

### Disinfectant Mixture.

Oil of tar.....	1 pound
Chalk .....	$1\frac{1}{2}$ pounds
Dried bran.....	$1\frac{1}{2}$ pounds

Mix.

### Disinfectant Powder.

Crude carbolic acid.....	1 gallon
Kieselguhr .....	7 pounds
Gypsum, powdered.....	50 pounds
Red ochre, enough to color ( $\frac{3}{4}$ to $\frac{1}{2}$ pound).	

Mix.

### Disinfectant Powder.

Iron sulphate.....	5 pounds
Zinc chloride.....	$\frac{1}{2}$ pound
Crude carbolic acid.....	1 pound
Gypsum .....	25 pounds

Mix.

### Disinfectant Powder.

Crude carbolic acid.....	5 pounds
Iron sulphate.....	10 pounds
Lime .....	50 pounds
Infusorial earth.....	50 pounds

Mix.

### Disinfectant Powder.

Bleaching powder, suspended in a parchment bag in a closet or room, acts as a good disinfectant.

### Disinfectant Powder.

Iron sulphate.....	10 pounds
Copper sulphate.....	1 pound
Bleaching powder.....	30 pounds
Gypsum .....	50 pounds

Mix.

### Disinfectant Powder.

Iron sulphate.....	2 pounds
Copper sulphate.....	2 pounds
Bleaching powder.....	10 pounds
Crude carbolic acid.....	1 pound
Gypsum .....	20 pounds

Mix.

### Disinfectant Mixture for Apartments.

Camphor .....	1 pound
Calcium hypochlorite.....	$2\frac{1}{2}$ pounds
Alcohol .....	$2\frac{1}{2}$ pints
Water .....	$2\frac{1}{2}$ pints
Oil of eucalyptus .....	1 ounce
Oil of cloves .....	1 ounce

Mix in a large vessel, kept cold. A few drops on a napkin are enough to disinfect a room.

### Disinfectant Mixture.

Camphor .....	1 pound
Javelle water.....	7 pints
Denatured alcohol.....	5 pints
Oil of eucalyptus.....	3 ounces

Dissolve the camphor and oil in the alcohol and gradually add the Javelle water. Shake before using.

### Disinfectant Liquid.

A 5% solution of formaldehyde, sprinkled around a room, or used in an atomizer, is an excellent disinfectant.

### Disinfectant Mixture.

Iron sulphate.....	8 ounces
Copper sulphate.....	1 ounce
Corrosive sublimate.....	1 dram
Alcohol .....	4 ounces
Water, enough to make...	32 ounces

Dissolve each salt in part of the water, mix and add the alcohol.

### Disinfection of the Hands.

1. Mechanical cleansing of the nails and thorough washing of the hands with soap and water.

2. Brushing for one minute.
3. Washing in alcohol.
4. Rinsing one minute in 3 per cent. carbolic or 1 to 2 per cent. sublimate solution.
5. Drying with clean towel, and wiping away scrapings of subungual space.

**Disinfectant Liquid.**

Iron sulphate.....	1 pound
Carbolic acid.....	$\frac{1}{2}$ pound
Alcohol .....	1 pint
Water, enough to make....	1 gallon

Mix and dissolve.

**Household Disinfectant.**

Iron sulphate.....	8 ounces
Ammonium chloride.....	1 ounce
Corrosive sublimate.....	1 dram
Alcohol .....	4 ounces
Water, enough to make....	32 ounces

Dissolve the iron sulphate in 24 ounces of water. Dissolve the corrosive sublimate in the alcohol. Mix both solutions, add the ammonium chloride and enough water to make 32 ounces.

Mix with equal parts of water and use as a disinfectant.

**Phenol Sodique.**

It is a thin, dark colored, almost black liquid, specific gravity 1.015 and an alkaline reaction. On agitating a great quantity of foam is produced. It contains 66 per cent. of tarry matters, and about 1 per cent. of phenols, which are not separated on diluting with water and nearly  $1\frac{1}{2}$  per cent. of soda. A very similar preparation is yielded by the following:

Dissolve 120 grains of soda in 4 fluid ounces of water; warm, add 2 troy ounces of coal tar and thoroughly shake for a few minutes. Then add sufficient water to make 1 pint, and set the mixture aside in a warm place, shaking frequently during seven days. Decant the solution, filter through a moistened filter, washing the residue with sufficient water to make the product measure one pint.

**Disinfecting Cakes.**

The so-called "urinal cakes" are said to be a mixture of rosin with sulphates of copper, iron, zinc and soda, and some alum.

**Carbolic Disinfectant Tablet.**

Intimately mix 20 parts of talc with 50 parts of plaster of paris and 10 parts of carbolic acid; sufficient water is then added to form a mass, which is poured into small paper capsules prepared for the purpose. The mass soon becomes hard; each tablet is then wrapped in paper and tin foil and the whole preserved in a tin box. For use, the wrapper is removed and the tablet placed in a suitable place in the room, in which a pretty strong odor of phenol will be perceptible for 10 or 15 days, according to the temperature.

**Disinfecting Sinks.**

Washing soda, two tablespoonfuls to a gallon of boiling water, makes an excellent wash to pour hot into the sink at night after you have finished using it.

**Disinfecting Sinks.**

Zinc chloride.....	1 ounce
Carbolic acid.....	4 ounces
Boiling water.....	1 gallon

Mix and dissolve. Use a gallon of boiling water after the above.

**Disinfecting Sinks.**

Sodium carbonate.....	4 ounces
Carbolic acid.....	4 ounces
Boiling water.....	1 gallon

Mix and dissolve. Use boiling hot.

**Disinfectant Solution, Two Chlorides.**

Common salt.....	4 ounces
Zinc chloride.....	1 ounce
Boiling water.....	1 gallon

Mix and dissolve.

**Disinfectant Solution, Three Chlorides.**

Common salt.....	4 ounces
Zinc chloride.....	1 ounce
Ammonium chloride.....	2 ounces
Water .....	1 gallon

Mix and dissolve.

**Disinfectant Solution, Four Chlorides.**

Common salt.....	4 ounces
Zinc chloride.....	1 ounce
Ammonium chloride.....	2 ounces
Ferric chloride.....	2 ounces
Water .....	1 gallon

Mix and dissolve.

**Solution of Four Chlorides.**

Alum .....	10 ounces
Sal soda.....	10 ounces
Ammonium chloride.....	2 ounces
Common salt.....	2 ounces
Zinc chloride.....	1 ounce
Muriatic acid, commercial	q. s.
Water, quantity sufficient	
to .....	1 gallon

Dissolve the alum in  $\frac{1}{2}$  gallon of boiling water, then add the sal soda, which gives a precipitate of aluminum hydrate. Muriatic acid is then added in sufficient quantity to dissolve this precipitate, thereby forming aluminum chloride. The other salts are then dissolved in the remainder of the water and added to the first solution.

The advantages claimed for this preparation are cheapness and ease of preparation; it is odorless and non-poisonous, and adaptable to general use. Its freedom from iron, in the disinfection of clothing, is an important point in so much that it will not injure the fabric in any way. It commends itself for the disinfection of rooms, by saturating a sheet with the diluted solution and hanging up in any convenient place. This diluted solution may be made by mixing one pint of the concentrated solution with 1 gallon of water.

**Disinfecting Fluid.**

Soft soap.....	1 pound
Coal tar.....	3 pounds
Sodium carbonate.....	2 pounds
Water .....	3 pints

Dissolve the soap in the tar and add the water in which the soda has been dissolved. Boil and mix.

**Disinfecting Fluid.**

Camphor .....	1 ounce
Carbolic acid.....	12 ounces
Ammonia water.....	10 drams
Alcohol .....	1 ounce

Mix and dissolve. To be diluted before using.

**Disinfecting Fluids.**

Aluminum sulphate.....	6 ounces
Zinc chloride.....	$1\frac{1}{2}$ ounces
Sodium chloride.....	2 ounces
Calcium chloride.....	3 ounces
Water, enough to make....	2 pints

Mix and dissolve.



**Disinfecting Fluid.**

Creosote .....	5 gallons
Powdered rosin.....	7 pounds
Soda lye.....	1½ pounds
Boiling water.....	2 gallons
Denatured alcohol.....	1 pint

Melt the rosin with the creosote, add the lye, then the water and alcohol, boil till dissolved.

**Antiseptic Solution, External Use.**

Menthol .....	1 dram
Thymol .....	2 drams
Boric acid.....	1 dram
Sodium benzoate.....	6 drams
Sodium salicylate.....	6 drams
Oil of gaultheria.....	6 drops
Oil of eucalyptus .....	18 drops
Glycerin .....	15 grams
Water, enough to make...	1 gallon

Powder the solid ingredients and mix with the oils and glycerin. Then add 2 ounces or powdered talc and the water. Filter after 3 days.

**Antiseptic Solution.**

Boric acid, powdered.....	4 ounces
Menthol .....	½ ounce
Thymol .....	¼ ounce
Benzoic acid.....	1 ounce
Alcohol .....	1 pint
Water, enough to make...	1 gallon

Dissolve the antiseptics in the alcohol, add the water. After 3 days, filter with talc powder.

**Compound Antiseptic.**

Corrosive sublimate.....	1 dram
Salt .....	5 drams
Carbolic acid.....	5 ounces
Zinc chloride.....	12 ounces
Zinc sulphocarbonate.....	12 ounces
Boric acid.....	8 ounces
Salicylic acid.....	1½ ounces
Thymol .....	1 ounce
Citric acid.....	1 ounce

Powder and mix. A teaspoonful of this powder dissolved in a gallon of water makes a good antiseptic.

**Volkman's Antiseptic Liquid.**

Thymol .....	1 part
Alcohol .....	10 parts
Glycerin .....	20 parts
Water .....	100 parts

Dissolve the thymol in the alcohol, add the glycerin, and lastly the water.

Used as an antiseptic on wounds and dressings.

**Corrosive Sublimate Solution.**

Corrosive sublimate.....	3 av. ounces
Picric acid.....	6 grains

(Hot distilled water sufficient to make 4 pints (imperial measure). Half an ounce of this solution made up to one pint with water produces a 1 to 1,000 solution, the strength usually employed.

**Compound Antiseptic Solution.**

Corrosive sublimate.....	1 ounce
Boric acid.....	4 ounces
Phenol .....	2 ounces
Water, enough to make...	1 gallon

Mix and dissolve. A teaspoonful to a cup of water is a good dressing.

**Cresylate of Lime.**

Add 5 parts of crude cresylic acid to a milk of lime containing one part of lime in 4 parts of water. If this proportion of ingredients is maintained, the syrupy liquid produced is miscible with water in all proportions, but if an excess of either ingredient is present, a solid mass is produced, very difficultly soluble.

**Carbolic Acid Paste.**

Melt on a water bath 1 pint honey, strain into 4 ounces glycerin, and incorporate sufficient of this powder to make a paste; precipitated chalk, 1 pound; orris powder, 4 ounces; carmine, 1 dram; mix, and flavor with carbolic acid, ½ dram, oil of wintergreen, 20 drops; oil of cinnamon, 5 drops; alcohol, 4 drams.

**Liquid Deodorant for Water Closets.**

Thymol .....	5 parts
Phenol .....	10 parts
Alcohol .....	100 parts
Water .....	.885 parts

Mix. The solution is used as a spray or is evaporated by heating at a low temperature.

**Liquid Deodorant for Water Closets.**

Ferric chloride.....	4 parts
Zinc chloride.....	5 parts
Aluminum chloride.....	5 parts
Calcium chloride.....	4 parts
Manganese chloride.....	3 parts
Water, sufficient to make...	90 parts

Dissolve and add to each gallon 10 grains thymol and ¼ ounce oil of rosemary previously dissolved in about 6 parts of alcohol, and filter.

**Liquid Deodorant for Water Closets.**

Potassium chloride.....	5 parts
Sodium chloride.....	5 parts
Magnesium chloride.....	5 parts
Zinc chloride.....	3 parts
Aluminum chloride.....	3 parts
Calcium chloride.....	6 parts
Water, sufficient to make...	100 parts

Dissolve and saturate with methyl salicylate and oil of eucalyptus.

**Liquid Deodorant for Water Closets.**

Thymol .....	1 part
Eucalyptol .....	4 parts
Borax .....	40 parts

Dissolve in

Glycerin .....	80 parts
Camphor water.....	160 parts
Tar water.....	410 parts

Most deodorants as a rule only correct bad odors by masking or covering them up, while a disinfectant destroys disease germs and the noxious properties of fermentation and putrefaction. As combining both a deodorant and a disinfectant see the following:

**Liquid Deodorant and Disinfectant.**

Corrosive sublimate.....	1 ounce
Ammonium chloride.....	4 ounces
Ferric chloride.....	2 ounces
Zinc chloride.....	2 ounces
Thymol .....	½ ounce
Eucalyptol .....	1 ounce
Alcohol .....	1 pint
Water, enough to make...	1 gallon

Dissolve the salts in the water, and the perfumes in the alcohol. Mix the two solutions and filter with talc.

**Water Closet Deodorant.**

Fill a quinine bottle with potassium permanganate and cork it securely. Bore two holes in the cork with a large pin, and fasten it by the aid of wires, mouth downward, in the cistern, so that when this is full it will be completely submerged. See that the holes are large enough to permit the water in the cistern to become sufficiently charged with the deodorant. The above supply of permanganate is sufficient to last several months.

**Sulphur Cones.**

Sublimed sulphur.....	10 ounces
Plaster of paris.....	2 ounces
Charcoal .....	1 ounce
Potassium nitrate.....	1 dram

Mix well and beat into a stiff dough with flour paste (using as little as possible of the latter). Mold into the required shape, and set in the sun to dry.

**Sulphur Candles.**

Sulphur candles are pure sulphur cast into proper molds with a wick in the center. It is rather hard to light them and the wick should therefore be impregnated with a solution of potassium nitrate or chlorate. Sometimes a very small amount of shellac or rosin is added to assist combustion.

**Disinfecting Candles.**

Add 5 per cent. carbolic acid to the stearin of which candles are made.

**Disinfecting Candles.**

In the same way the following disinfectants may be added to the material of which candles are made:

Oil of eucalyptus.....	5 to 10 per cent.
Iodoform .....	1 to 2 per cent.
Napthalene .....	2 to 5 per cent.

**Deodorizing Spray for Office.**

Guaiacol .....	10 cc.
Eucalyptol .....	10 cc.
Menthol .....	5 grams
Thymol .....	2 grams
Oil of gaultheria.....	30 cc.
Oil of peppermint, enough to make.....	75 cc.

Mix. Use by means of an atomizer.

**An Agreeable Disinfectant.**

The following mixture forms a thick cream, a small quantity of which, poured on a plate, soon diffuses an agreeable odor throughout the apartment, acting at the same time as an effective disinfectant:

Camphor .....	20 parts
Chlorinated lime.....	50 parts
Alcohol .....	50 parts
Water .....	58 parts
Oil of eucalyptus .....	1 part
Oil of cloves .....	1 part

Mix.

**Odorless Disinfectant.**

Alum .....	10 pounds
Sodium carbonate.....	10 pounds
Ammonium chloride.....	2 pounds
Salt .....	2 pounds
Zinc chloride.....	1 pound
Hydrochloric acid (com- mercial) .....	sufficient
Water, enough to make....	16 gallons

Dissolve the alum in 8 gallons of boiling water; then add the sodium carbonate, followed by the hydrochloric acid, until the precipitate first formed is dissolved. Dissolve the remaining salts in the balance of the water, and add to first solution.

**Formaldehyde Disinfection.**

The following is the method of formaldehyde disinfection used by the Chicago Department of Health:

The room to be disinfected is sealed and prepared as usual for sulphur disinfection, by pasting strips of paper over cracks of doors and windows. All its surfaces are exposed as much as possible; closet doors are opened and their contents, together with the contents

of drawers, are removed, scattered about and the drawers left open; mattresses are set on end; pillows, bedding, clothing, etc., are suspended from lines stretched across the room or spread out on chairs and other objects so as to expose all sides; books are opened and the leaves spread—in short, the room and its contents are so disposed as to secure free access of the gas to all parts as fully as possible.

For every 1000 cubic feet of space in the room, suspend, by one edge, an ordinary bed-sheet (2 by 2½ yards) from a line stretched across the middle of the room. Properly sprinkled this will carry, without dripping, 8 ounces of solution of formaldehyde—the 40 per cent. solution of formaldehyde gas—which is sufficient to disinfect 1000 cubic feet of space. As many sheets as necessary are used hung at equal distances apart. The ordinary rather coarse cotton sheet should be used in order to secure rapid evaporation. The house should remain sealed not less than eight hours. A rosehead sprinkler used by florists can be used for sprinkling the sheets.

After the disinfection soak all sheets, pillow slips, towels and other washable articles in the sick-room, in the strong disinfectant and remove them, while wet, to the laundry, to be boiled at least thirty minutes. Sprinkle thoroughly all the surfaces of pillows and of the mattresses with the strong disinfectant and then carry them into the open air, to be exposed to sunshine for at least six hours—frequently turning the articles. Mattresses and pillows should be burned or sterilized by heat if soiled by discharges from the patient. Consult the physician on this point.

**Formaldehyde Disinfection.**

The best method of disinfection following communicable diseases is undoubtedly that effected by means of formaldehyde, the process authorized by the New Hampshire State Board of Health, being as good as any. It is most efficient and satisfactory, and is the method authorized and required by law, to be used by local boards of health, in that State.

The room and contents should be prepared as follows: The windows, doors (with the exception of the one which is to give exit to the operator), registers, openings into chimneys, keyholes, and all other apertures through which air can pass shall be sealed. In other words, the rooms should be made as nearly air-tight as possible. Gummed paper, put up in rolls, is made for this particular purpose. In lieu of it, however, common newspaper, cut into narrow strips and thoroughly wet, may be used, as it will remain in position long enough for the purpose. The paper used for sealing cracks, whether gummed or not, should be wet with a two per cent. solution of formaldehyde, in order to disinfect the surfaces upon which it is to be pasted.

All surfaces should be exposed as much as possible; closet doors opened and their contents, together with the contents of drawers, removed, scattered about, and the drawers left open; mattresses set on end, pillows, bedding, clothing, etc., suspended from lines stretched across the room or spread out on chairs or other objects so as to expose all sides; books opened and the leaves spread—in short, the room and its contents so disposed as to secure free access of the gas to all parts as fully as possible. Upon this preparation largely depends the thoroughness of the disinfection. The amount of cubic space to be disinfected should be calculated. For each 1,000 cubic feet of space it is required to use

Potassium permanganate..6½ ounces  
Solution of formaldehyde  
(40 per cent.)..... 1 pint

For this amount of chemicals and cubic feet of space, one large, flaring pail is the only apparatus needed. The pail should be not less in size than the ordinary water pail of ten or twelve quarts, and under it should be placed a few newspapers or a piece of old carpet, so that in case it should overflow or spatter during the intensely rapid effervescence which takes place, the floor may be protected. A wooden or indurated fiber pail is better for the purpose than one made of metal, as it better retains the heat which is evolved and which is essential to the best results. When all is in readiness, place the potassium permanganate in the pail, then pour the solution of formaldehyde upon it. The operator will be obliged to leave the room almost instantly, on account of the rapid formation of gas. The premises should remain closed for not less than five hours; a longer time would be better. If several rooms are to be disinfected, the process may be carried out in each room separately, having everything in readiness in all of the rooms, so that the operator may be prepared to do the work as quickly as possible. The temperature of the rooms to be disinfected should not be less than 60° F. If lower than that, they should first be warmed. If the temperature is below 60°, an increased amount of chemicals will have to be used to be effective.

Remember that the formaldehyde solution must be poured upon the potassium permanganate, and never the reverse.

#### Formaldehyde for Treating Grain.

The treatment of smut in wheat, oats, and other grains with formaldehyde recommended by the Colorado Agricultural Experiment Station is as follows: Spread the seed grain on a piece of canvas on hard, level ground and sprinkle the grain with a solution of formaldehyde (1 pound) in 40 gallons of water. This solution is sufficient to treat 2500 pounds of grain. After sprinkling the grain is covered over with blankets or canvas for three or four hours. The covering is then removed and the grain spread out and allowed to dry until it may be taken in the hand without the kernels sticking together, when it should be sown.

#### Atomizing Liquid for Sick Rooms.

Oil of turpentine .....	4 ounces
Oil of lavender .....	2 ounces
Oil of eucalyptus .....	2 ounces
Oil of lemon .....	1 ounce
Oil of bergamot .....	1 ounce
Alcohol .....	1 pint

Mix. Expose to the trays of the sun for 1 week, shaking it once in a while.

#### Atomizing Liquid for Sick Rooms.

Carbolic acid, pure.....	½ ounce
Thymol .....	½ ounce
Menthol .....	½ ounce
Alcohol .....	1 pint

Mix and dissolve.

#### Atomizing Liquid for Sick Rooms.

Carbolic acid.....	½ ounce
Menthol .....	½ ounce
Cologne water.....	1 pint

Mix and dissolve.

#### Fumigating a Room.

Take an iron shovel heated very hot and pour on it, drop by drop, some vinegar. The steam arising is a disinfectant. Open doors and windows that it may escape.

#### Preservative for Botanical Specimens.

The specimen is carefully spread out and placed between two thick sheets of blotting paper and pressed by a clean, smooth, heated dhoby's iron. The pressure by the iron should be always downwards, not sideways. For instance, if a rather big leaf has to be pressed by a small iron, the iron should be lifted straight up from the part already pressed and laid on the unpressed part with a downward pressure. If the iron be even slightly dragged across from one part of the leaf to another the leaf might be squeezed or distorted by the sideward pressure thus exerted.

The pressing is done so as to remove the moisture from the leaf and to make it dry and smooth for keeping. If a specimen is very thick and fleshy, it will be better to press out the moisture gently and gradually rather than to attempt to do it too quickly. If the blotting paper becomes saturated after some of the leaves have been pressed, fresh blotters should be used for pressing any more that remain to be done, as the paper which has become thoroughly wet will be useless for the purpose.

When the pressing is over, the leaf should be carefully removed from between the sheets of blotting paper and mounted on card or thick paper after gently applying some liquid gum to the back of the leaf. If the mounting cannot be done immediately after pressing the specimen, it may be temporarily placed between the leaves of a book, and mounted afterwards, when convenient. The mounted specimens must be kept, as far as possible, without being bent or squeezed.

#### Preservative for Botanical Specimens.

Glycerin jelly for botanical preparations: Soak 1 ounce gelatin in 6 ounces water for 2 hours, then add 7 drops of glycerin and 1 per cent. of carbolic acid, warm until the flocks caused by the acid disappear, and filter while still warm through glass-wool or tow.

#### Preservative for Botanical Specimens.

Glycerin, 3 ounces; camphor water, 2 ounces; dissolve and keep in well corked bottles.

#### Preservative for Botanical Specimens.

Glycerin, alcohol, distilled water, of each, 1 ounce.

#### To Preserve Botanical Specimens.

The requisites are two flat boards, 2 feet by 1½ feet, a supply of drying papergray filtering paper in sheets), several heavy weights (stones will serve the purpose), tragacanth paste, and cartridge paper. The first thing after one has brought the plants home is to dry them without delay. To do this, place one board on the floor with several sheets of paper upon it; then carefully spread out the specimen, keeping down with small pieces of drying paper and light weights any leaves or flowers which have a tendency to spring up from their position. When the whole is carefully spread out, place another sheet of paper over the specimen, starting from the bottom and removing weights as you go along. Add other three or four sheets of paper to the pile, then arrange other specimens in the same way, with thick pads of paper between, if the stems are thick. Finally, place the second board on top, and load it with weights. Change the paper daily, drying the damp sheets before the fire. In a week or ten days the specimens will be ready for mounting. Cartridge paper is best for mounting purposes; the sheets should measure 18 by 12 inches.



**Mounting Paste for Plant Specimens.**

Powdered tragacanth.....	6 drams
Powdered acacia.....	4 drams
Glycerin .....	3 drams
Water .....	6 drams
Mercury perchloride.....	12 grains

Mix in a mortar, and add, with dextrous stirring:

Boiling water.....	6 ounces
Oil of cloves.....	10 drops

The oil to be added before the paste becomes cold.

Spread a thin layer of this paste upon a board, place a specimen dexterously upon it, touching delicate parts with the forceps, then lift by grasping the strongest part of the stem with the forceps, and transfer to the cartridge paper. The specimen is now to be treated as for drying, and placed under the press for a day. Finally, the thick part should be rendered secure by pasting a piece of thin muslin on the back and sewing the stem with a strong linen thread.

**To Preserve the Natural Color of Pressed Flowers.**

Moisten the blotting paper, between which the flowers are to be pressed, with a 2 per cent. solution of oxalic acid, and hang up to dry. The discoloration is caused by the ammonia in the air and the oxalic acid will form a harmless ammonium oxalate.

**Herbarium Specimens—Direction for Drying.**

Obtain a half-dozen pieces of stout mill board, cut to about 12x18 inches. Then gather about a hundred old newspapers and fold them neatly to about the dimensions of the mill boards. Four or five yards of common white cotton wadding, a score of sheets of tissue paper, and as many of blotting paper, all cut to the same size, complete the apparatus. One of the boards serves as a foundation; on this place a newspaper, then a piece of wadding and upon this place the specimen intended to be dried. The cotton being soft and retentive, every portion can be laid in a proper and natural way, including the petals of flowers. Put a newspaper above (two or three, if the specimens have thick stems) and so on until all the specimens have been deposited similarly. If the specimens are hairy or sticky, or of a kind that the wadding seems likely to adhere to, then, before depositing them on it, introduce a half sheet of tissue paper. A heavy weight must be placed on top of all, sufficient to imbed the specimens in the wadding; then leave the whole to rest for twenty-four hours. All the papers must then be changed, dry ones being put in their places; and if the plant seems to throw off a very considerable amount of moisture, and renders the wadding quite damp, change the wadding also. A second or even a third change is desirable at the end of two or three days or a week, and when this is made, introduce the blotting paper, pressing again until everything is flat and the specimens are dry. When thus dried, every petal and leaflet retains the form it had in life, and nine specimens out of ten preserve their color exactly. To insure the keeping of color, it is well, if time can be spared, to change the blotting paper many times, and to dry it thoroughly before a fire; this, however, need not be done until after the third day.

**Autumn Leaves, to Preserve.**

Dry as quickly as possible, by putting the leaves between folds of any very absorbent

paper, and change frequently—as often as once a day. A warm flat-iron judiciously used will help the drying, but overheating will spoil all. When the leaves are quickly and thoroughly dried they will retain their colors for several months. In making up ornamental work, the leaves should have a light coat of boiled linseed oil. This brings out the color and gives a more natural color appearance than varnish of any kind. For fastening them to cardboard or any other support, glue is best. Do not oil the under sides of the leaves, as this will prevent the glue from adhering.

**Autumn Leaves, to Preserve.**

To preserve autumn leaves, dip them in melted paraffin or wax and allow to dry.

**Autumn Leaves, to Preserve.**

Dissolve two ounces of white shellac in a gallon of alcohol and dip the leaves in the solution. Hang up to drain and dry.

**Autumn Leaves, to Preserve.**

A solution of paraffin in benzine, applied and allowed to dry on the leaves, is also a good preservative of the colors.

**Plants, to Preserve the Natural Colors.**

Dissolve 1 part salicylic acid in 600 parts alcohol, heat the solution to boiling point in an evaporating vessel and draw the plants slowly through it. Shake them to get rid of any superfluous moisture, and then dry between sheets of blotting paper under pressure in the ordinary manner. Too prolonged immersion discolors violet flowers, and in all cases the blotting paper must be frequently renewed.

**Preserving Cut Flowers.**

The flowers are cut early in the morning before the dew is off, and are thoroughly wet by dipping into a solution of sodium bicarbonate of a strength of about 1 part of the salt to 16 of water. After letting stand for a little time, they are then dipped in a saturated aqueous solution of salicylic acid, removed at once and placed under a bell glass for a short time to dry.

**To Preserve Rubber Tubing.**

Rubber tubing, when not in use, should be neatly coiled in vessels of water carrying a small quantity of common salt in solution.

**Preserving of Rubber Gloves, etc.**

After boiling in water the gloves are plunged in a vessel of sterilized water, containing formaldehyde 1 : 10,000. When treated in this way, gloves may be kept in perfect condition for a year, and the same applies to other articles made of rubber. It is, of course, understood that the gloves must not be subjected to the action of grease, oils, or other substances which disintegrate the rubber.

**Preserving Rubber Goods.**

To prevent rubber articles or instruments from becoming dry or growing brittle, thereby losing their elasticity, Dr. Pol recommends the following simple mixture: Ammonia water, 1 part; water, 2 parts; the various articles should be immersed in the solution for a length of time varying from a few minutes to half an hour until they resume their former elasticity, smoothness and softness.

Very elastic caoutchouc tubing gradually loses some of its elasticity. Later the tubes break on stretching, even if previously laid in warm water, and finally they crack if pressed with the fingers. This change is put

down to a very slow formation of sulphuric acid by the action of the moist air on the sulphur contained in the caoutchouc. By frequent washing with slightly alkaline water the action of the acid is prevented. Tubes washed five or six times a year remain perfectly elastic. Very often rubber hose will become hard, but this hardness can be removed by dipping in petroleum and allowing the hose to hang up for a couple of days.

#### To Preserve Ropes and Cordage.

Dry ropes immersed for four days in a bath containing 20 grains of copper sulphite to a quart of water are for some time preserved from the attacks of animal parasites and rot.

#### To Prevent Decay in Wood.

Take 20 parts of resin, 45 parts of finely powdered chalk, some hard sand, a little linseed oil and sulphuric acid; mix all together, and boil for a short time. This composition, if applied while hot, forms a kind of varnish, thereby preserving the wood.

#### To Preserve Urine.

Add a few crystals of chloral hydrate, but it is doubtful whether the addition does not interfere with the subsequent examination, especially for the microscopical examination for crystals. Epithelial cells, casts, etc., do not seem to be interfered with. Thymol seems to be a good preservative of urine without having any apparent disadvantages. The chemical and microscopical examination of a dozen samples, preserved ten days with thymol, single crystals weighing 3 or 4 grains, gave the same result as the examinations of the urine did before the thymol was added.

#### To Preserve Urine.

A few drops of chloroform added to a specimen of urine to be examined, will preserve it for a number of days.

#### Preserving Fluid for Pathological Specimens.

Common salt.....	1 pound
Saltpetre .....	4 ounces
Carbolic acid.....	1 ounce
Glycerin .....	3 ounces
Amylic alcohol.....	8 ounces
(or ethylic alcohol.....)	16 ounces)
Water .....	1 gallon

Mix. Specimens should first be soaked in strong brine, and then placed in a large quantity of this fluid.

#### Preservation of Leeches.

As soon as the leeches arrive from the dealer, they should at once be removed from the box, and washed thoroughly in soft water, which should be at 60° F. The first washing rejected, they should then be placed in a jar half filled with water about the same temperature, with a piece of clean muslin placed over the mouth of the jar and covered with a perforated lid. Care must be taken that the water replaced be no colder than the water rejected or thrown away. The jar should be well cleansed inside every day or two in winter, and every day in warm weather, thus preventing the accumulation of any foreign matter along the sides of the jar, and the leeches taken out and gently rubbed between the fingers or between the folds of a soft cloth to free their bodies of the mucous or slimy substance which envelops them. Guard also against the access of acrid vapors which may come in contact with the jar, such as ammonia, gas, and the vapor of mineral acids, which by their density find a ready means of access through the holes in the lid to become absorbed by the water in the jar,

which after a short time would result fatally. If these precautions are carefully taken the leeches may be kept in a fine state of health, and there would be no likelihood of trouble in getting them to bite readily when applied to any part of the body.

#### To Preserve Starch Paste.

Corrosive sublimate previously dissolved in the water used in preparing the paste.

#### To Preserve Starch Paste.

Oil of cloves (2 drams to 1 pound) added to the paste before it thickens, is a good preservative.

#### Liquid for Preserving Larvae, Insects, etc.

Sodium chloride, 2 parts; alum, 1 part; distilled water, 16 parts. To each pint add 1 grain of corrosive sublimate. Glycerin alone is a capital preservative for small objects, care being taken to add a small quantity of distilled water, as anhydrous glycerin in its avidity for water will otherwise abstract it and shrivel the tissues. Chloral hydrate in solution is another good preservative.

#### Liquid for Preserving Larvae, Insects, etc.

Salicylic acid, 4 parts; boric acid, 5 parts; potassium carbonate, 1 part; mix and dissolve by the aid of heat in a mixture of 96 parts of distilled water and 40 parts of glycerin. When solution is complete, add 100 parts of alcohol, 95 per cent, in which 3 parts each of oil of cinnamon and oil of cloves have been dissolved. This is a capital preservative of small animals, reptiles and batrachians.

#### Liquid for Preserving Larvae, Insects, etc.

Make a stock solution of 1 part of salicylic acid dissolved in 100 parts pyroligneous acid.

For larvae, hydrae and nematodea, take 3 parts of the solution, 10 parts glycerin and 20 parts distilled water.

For infusoria, take 2 parts glycerin, 3 parts distilled water and 1 part stock fluid.

For algae, desmids, etc., take 1 part glycerin, 20 parts distilled water and 1 part stock fluid.

#### Preservation of Essential Oils.

Essential oils which easily resinify and assume a turpentine odor, can be kept indefinitely by adding sodium bisulphite in the proportion of fifty grains to one pound.

#### Preserving Vinegar, Glue, Ink, etc.

Add about  $\frac{1}{4}$  to  $\frac{1}{2}$  per cent of formic acid to the liquid to be preserved. Formic acid, used in about the same proportions, has been highly recommended as a preservative of fruit juices. Its use is condemned by most food authorities, however.

#### Embalming Fluid.

Potassium chlorate.....	4 ounces
Aluminum sulphate.....	6 ounces
Chlorinated lime.....	4 ounces
Arsenous acid.....	4 ounces
Corrosive sublimate.....	2 ounces
Water .....	2 gallons

Mix.

#### Embalming Fluid.

Melt together 5 pounds dry aluminum sulphate, 1 quart warm water, and 100 grains arsenous acid. Inject 3 or 4 quarts of this mixture into all the vessels of the human body.

**Embalming Fluid.**

Solution of formaldehyde is used for the preservation of dead bodies and anatomical specimens, its action being due to its combination with gelatinous and albuminoid substances. Here are two formulas in which formaldehyde is used, the first being said to be approved by a committee of the National Funeral Directors' Association of the United States:

Solution of formaldehyde.....	11 pounds
Glycerin .....	4 pounds
Sodium borate.....	2½ pounds
Boric acid.....	1 pound
Potassium nitrate.....	2½ pounds
Solution of eosin (1 per cent) .....	1 ounce
Water, enough to make...	10 gallons

Dissolve the sodium borate, boric acid and potassium nitrate in 6 gallons of water, then add the glycerin, solution of formaldehyde and, lastly, the solution of eosin, and enough water to make the whole measure 10 gallons.

**Embalming Fluid.**

Common salt.....	500 parts
Alum .....	750 parts
Arsenous acid.....	350 parts
Zinc chloride.....	120 parts
Mercury chloride.....	90 parts
Solution of formaldehyde (40 per cent).....	6,000 parts
Water, enough to make...	24,000 parts

Dissolve the salts and arsenous acid in 12,000 parts of water, add the solution of formaldehyde and enough water to make 24,000 parts.

**Embalming Fluid.**

A simple form of injection suitable for anatomical specimens consists of glycerin, 14 parts; soft sugar, 2 parts; potassium nitrate, 1 part. This has been found to be very efficient, as the parts saturated with it become comparatively indestructible, and change neither in size nor figure.

**Embalming Fluid.**

Arsenous acid.....	14 parts
Caustic soda.....	7 parts
Carbolic acid,	
Water, of each, a sufficient quantity.	

Dissolve the arsenous acid and the soda in 20 parts of water by the aid of heat. Allow the solution to cool, and then add to it just enough carbolic acid to render it opalescent. Finally add enough water to make the product weigh 100 parts.

**Embalming Fluid.**

	For Injecting.	For Immersing.
Arsenous acid.....	16 gms.	12 gms.
Sodium chloride....	80 gms.	60 gms.
Potassium sulphate	200 gms.	150 gms.
Potassium nitrate..	25 gms.	18 gms.
Potassium carbonate	10 gms.	15 gms.
Water .....	20 lit.	10 lit.
Glycerin .....	4 lit.	4 lit.
Wood naphtha....	¾ lit.	¾ lit.

Mix.

**Embalming Fluid.**

Salicylic acid.....	4 drams
Boric acid.....	5 drams
Potassium carbonate.....	1 dram
Dissolved in hot water.....	12½ ounces
Glycerin .....	5 ounces

Mix, then add oil of cinnamon, oil of cloves, each 3 drams, dissolved in alcohol, 12½ ounces and shake well.

**Embalming Fluid.**

Arsenous acid.....	1 ounce
Mercury bichloride.....	1½ ounces
Alcohol .....	½ pint
Carbolic acid water (5 per cent) .....	1 gallon

Mix. The quantity required in the case of adults is 5 to 6 quarts.

**Embalming Fluid.**

Thymol .....	15 grains
Alcohol .....	3 fl. drams
Glycerin .....	10 fl. ounces
Water .....	5 fl. ounces

Dissolve the thymol in the alcohol, add the glycerin and then the water. This has also been extensively used for preserving anatomical and museum specimens.

**Brunelli Embalming Process.**

The circulatory system is cleaned by washing with cold water until it issues quite clear from the body. This may occupy from 2 to 5 hours. Alcohol is then injected so as to extract as much water as possible. This requires about 15 minutes. Ether is then injected to extract the fatty matters; this requiring from two to ten hours. A strong solution of tannin is then injected and allowed to be absorbed by the tissues, which should require from two to ten hours. The body is then dried in a current of warm air which has been passed over calcium chloride. This may occupy from two to five hours, when the operation is complete.

**Beal's Injecting Fluid.**

Potassium ferrocyanide....	150 grains
Tincture of ferric chloride	6 drams
Ethyl alcohol.....	10 ounces
Methyl alcohol.....	15 drams
Glycerin .....	10 ounces
Water .....	40 ounces

Dissolve the ferrocyanide of potassium in 10 ounces of water, mix the tincture of ferric chloride with 10 ounces of the water. Add the solution of ferric chloride to the solution of ferrocyanide of potassium, drop by drop, with constant stirring. Mix the alcohols, glycerin and remaining water together, and add it in portions to the ferric chloride and ferrocyanide mixture, being careful to shake violently after each addition. If the ferric chloride solution is not added in very small portions and constant brisk stirring to the ferrocyanide solution, a precipitate is formed that will settle very readily and consequently cannot be used as an injecting fluid.

**Anatomical Preserving Liquid.**

Quinoline muriate.....	5 parts
Sea salt.....	6 parts
Glycerin .....	100 parts
Water .....	900 parts

Mix. The only inconvenience attending the use of this solution is that it takes out all the coloring matter, the specimens assuming a very pale hue.

**Preserving Anatomical Preparations.**

Prepare a solution of 5½ ounces sodium chloride, 640 grains sugar, 320 grains potassium nitrate, in 34 fluid ounces of water, and acidulate it by the addition of about 3 per cent of boric or tartaric acid. The object of this acidulation is to convert the haemoglobin in the specimen into haematin. Immerse the specimens in the solution, and then dilute the latter with enough water to cause the specimens to sink. After 6 or 8 weeks they are then transferred to a fresh, colorless solution prepared from the same ingredients.



The process may also be carried out by using the above solution diluted with  $\frac{1}{3}$  or  $\frac{1}{2}$  of its volume of water. In this case the specimens are covered with the liquid, care being taken that all inclosed air bubbles are expelled, and the vessels completely filled with the liquid, so that it will touch the lid when this is put on.

## INCENSE, FUMIGANTS.

### Incense.

Benzoin .....	4 ounces
Styrax .....	4 ounces
Labdanum .....	6 ounces
Myrrh .....	6 ounces
Cascarilla .....	3 ounces
Oil of cinnamon .....	8 minims
Oil of lavender .....	20 minims
Oil of bergamot .....	20 minims
Oil of cloves .....	20 minims

Mix, and pass through a coarse sieve.

### Incense.

Powdered cascarilla.....	2 ounces
Myrrh .....	1 ounce
Styrax .....	1 ounce
Benzoin .....	1 ounce
Thus .....	1 ounce
Burgundy pitch.....	1 ounce

Powder coarsely, mix and sift.

### Incense.

Gum olibanum (selected)..	4 ounces
Gum benzoin .....	4 ounces
Cascarilla .....	3 ounces
Lavender flowers.....	1 ounce
Cloves .....	$\frac{1}{2}$ ounce

Powder coarsely and mix.

### Incense.

Gum olibanum, selected...	4 ounces
Gum benzoin, selected....	4 ounces
Sandalwood .....	4 ounces
Gum myrrh.....	4 ounces

Powder coarsely and mix.

### Incense.

Frankincense .....	3 parts
Benzoin .....	3 parts
Amber .....	3 parts
Lavender flowers.....	1 part

Mix. This mixture is designed to be ignited upon coals, a stove, or hot iron to diffuse an agreeable aroma in an apartment and incidentally to destroy noxious effluvia.

### Incense.

Styrax .....	2½ ounces
Benzoin .....	12 ounces
Musk .....	15 grains
Burnt sugar.....	$\frac{1}{2}$ ounce
Frankincense .....	2½ ounces
Gum tragacanth.....	1½ ounces
Rose water, sufficient to form a mass.	

Mix. To be divided into small tablets.

### Incense Powder.

Gum galbanum, powdered.	1 pound
Potassium nitrate, powdered .....	1 ounce

Mix them.

### Incense.

Olibanum, powdered.....	8 ounces
Benzoin, powdered.....	8 ounces
Potassium nitrate.....	1 ounce

Mix well.

### Incense Powders.

Sandalwood, powdered....	1 pound
Cascarilla bark, powdered.	$\frac{1}{2}$ pound
Benzoin, powdered.....	$\frac{1}{2}$ pound
Vetivert .....	2 ounces
Potassium nitrate.....	2 ounces
Grain musk.....	$\frac{1}{4}$ dram

Mix. Sift the whole well together several times through a fine sieve.

### Holy Incense Powder.

Gum benzoin, ground.....	$\frac{1}{4}$ pound
Cascarilla bark, ground...	$\frac{1}{4}$ pound
Sandalwood, ground.....	$\frac{1}{4}$ pound
Potassium nitrate, powdered .....	1 ounce
Grain musk.....	10 grains

Mix the ingredients thoroughly. To be kept in an air-tight vessel.

### Incense Powder.

Benzoin .....	3 ounces
Gum thus.....	3 ounces
Styrax .....	3 ounces
Olibanum .....	2 ounces
Cascarilla .....	6 ounces
Musk .....	10 grains

Powder coarsely and mix.

### Incense Powder.

Styrax .....	4 ounces
Cascarilla .....	2 ounces
Benzoin .....	3 ounces
Olibanum .....	1 pound

Powder coarsely and mix.

### Incense Powder.

Olibanum .....	10 ounces
Benzoin .....	3 ounces
Cascarilla .....	2 ounces
Cassia bark.....	1 ounce
Cloves .....	1 ounce

Powder coarsely and mix.

### Fumigating Paper.

To prepare paper for this purpose select good white thick blotting paper, and cut in convenient sizes ( $2 \times 10$ , or  $4 \times 12$  inches). Make a solution of 1 ounce of potassium nitrate in 12 ounces of boiling water. Saturate the strips of paper with this solution and hang them up to dry. Then draw them through one of the following solutions:

### Fumigating Paper.

Siam benzoin.....	1 ounce
Storax .....	$\frac{1}{2}$ ounce
Olibanum .....	$\frac{1}{2}$ ounce
Mastic .....	1 dram
Cascarilla .....	1 dram
Vanilla .....	$\frac{1}{2}$ dram
Alcohol .....	8 ounces
Oil of cinnamon .....	8 drops
Oil of cloves .....	8 drops
Oil of bergamot .....	5 drops
Oil of neroli .....	5 drops

Macerate the drugs in the alcohol for 4 days, filter, add the oils and saturate paper as directed in the preceding formula.

### Fumigating Powder.

Gum benzoin.....	1½ ounces
Sandalwood .....	1 ounce
Alcohol .....	8 ounces

Macerate and filter, then add:

Essence of cinnamon....	3 drams
Oil of lemongrass.....	30 drops

Mix and use with paper prepared as directed in the preceding formula.

**Fumigating Paper.**

Tincture of benzoin..... 8 ounces  
Cologne water..... 4 ounces  
Mix and use with paper as above.

**Fumigating Paper.**

Tincture of benzoin..... 4 ounces  
Tincture of myrrh..... 4 ounces  
Cologne water..... 4 ounces  
Mix and use with paper as above.

**Fumigating Paper.**

Oil of cloves ..... ½ ounce  
Oil of cinnamon ..... ½ ounce  
Oil of bergamot ..... 2 ounces  
Oil of lavender ..... 2 ounces  
Tincture of benzoin..... 8 ounces  
Mix and use with paper as above.

**Fumigating Paper.**

Balsam peru..... 1 ounce  
Oil of cloves ..... 2 ounces  
Oil of bergamot ..... 2 ounces  
Tincture of vanilla ..... 4 ounces  
Tincture of benzoin ..... 8 ounces  
Mix and use with paper as above.

**Fumigating Paper.**

Musk ..... 1 dram  
Oil of cloves ..... ½ dram  
Oil of lavender ..... ½ dram  
Oil of rose ..... ½ dram  
Tincture of benzoin..... 4 ounces  
Mix and use with paper as above.

**Ribbon of Bruges for Incense.**

Undressed tape is first steeped in a solution of potassium nitrate and dried; then steeped in a strong tincture of gum resins. The ribbon, cut into lengths, is now coiled into vases, through a slit in the lids of which an end of the ribbon projects. On lighting the projecting end, and blowing out the flame, the ribbon smolders, and the fragrance effuses itself into the air. The smoldering is extinguished when it reaches the slits of the vase.

**The Nitre Solution—**

Potassium nitrate..... 8 ounces  
Water ..... 1 gallon

**Bottle A—**

Gum benzoin..... 1½ pounds  
Gum myrrh..... 4 fl. ounces.  
Extract orris root..... 40 ounces

Allow to stand for 1 month.

**Bottle B—**

Alcohol, 90 per cent..... 2 pints  
Pod musk..... 2 ounces  
Oil of rose..... ½ ounce

Allow to stand for 1 month.

The contents of bottles A and B are mixed, the tape steeped for 12 hours in the solution of nitre and then dried; it is then passed through the tincture and again dried, when it is ready for use.

**Ribbon for Fumigating.**

The ribbon is prepared with potassium nitrate according to the preceding formula. It is then drawn through any of the solutions described under Fumigating Paper, and ignited.

**Pastilles (Aromatic).**

Roasted coffee..... 75 parts  
Wood charcoal..... 25 parts  
Boric acid..... 25 parts  
Sugar ..... 60 parts

Pulverize each separately, and very fine; mix; add vanillin to flavor and mucilage of tragacanth to form a mass. Divide into pastilles.

**Fumigating Pastilles.**

Benzoin ..... 1 ounce  
Cascarilla bark..... 1 ounce  
Myrrh ..... 2½ drams  
Oil of nutmegs ..... 1 dram  
Oil of cloves ..... 1 dram  
Oil of cinnamon ..... ½ dram  
Saltpetre ..... 4 drams  
Charcoal, powdered..... 8 ounces  
Mucilage, q. s.

Mix and make into small cones.

**Paris Pastilles.**

Benzoin ..... 5 drams  
Cascarilla bark..... 5 drams  
Myrrh ..... 2 drams  
Wood charcoal..... 4 ounces  
Oil of nutmeg ..... 1 dram  
Oil of cloves ..... 1 dram  
Saltpetre ..... 3 drams  
And the necessary quantity of solution of gum tragacanth.

Mix and make into conical pastilles.

**Pastilles for Burning.**

Powdered cascarilla..... 8 ounces  
Benzoin ..... 4 ounces  
Yellow sandalwood..... 2 ounces  
Styrax calamita..... 2 ounces  
Olibanum ..... 2 ounces  
Charcoal ..... 6 ounces  
Mucilage of tragacanth, q. s.

Reduce the substances to powder and form into a paste with the mucilage, and divide into small cones with a tripod base.

**Cheap Fumigating Pastilles.**

Gum benzoin, powdered... 2 ounces  
Cascarilla, powdered..... 2 ounces  
Myrrh, powdered..... 1 ounce  
Potassium nitrate, powdered ..... ½ ounce  
Potassium chlorate, powdered ..... 1 dram  
Charcoal, powdered..... 4 ounces  
Oil of cloves ..... 1 dram  
Oil of cinnamon ..... 1 dram  
Oil of lavender ..... 1 dram  
Oil of sandalwood ..... 1½ drams  
Mucilage of tragacanth, sufficient.

Mix to form a stiff paste. Make into cones and set aside to dry.

**Fumigating Pastilles.**

Charcoal ..... 6 parts  
Frankincense ..... ½ part  
Juniper wood..... ¼ part  
Liquid storax..... 1/3 part

Mix and form into a paste with starch paste, and then divide into cone-shaped pastilles.

**White Fumigating Pastilles.**

Pulverized lima wood.... 8 parts  
Benzoin ..... 1 part  
Mastic ..... 1 part  
White Peruvian balsam... ½ part

Mix with as much solution of gum tragacanth as required and form into pastilles.

**Fumigating Pastilles.**

Any of the fumigating powders, described above, may be formed into pastilles by powdering fine, adding 5 per cent of potassium nitrate and sufficient mucilage of tragacanth to form a stiff mass. Then form them into cones and dry.

**Perfumed Pastilles.**

Wood charcoal powder.....	500 parts
Benzoin .....	375 parts
Tolu balsam .....	125 parts
Vanilla beans.....	125 parts
Cloves .....	125 parts
Oil of sandalwood.....	3 parts
Oil of neroli.....	3 parts
Potassium nitrate.....	50 parts
Solution of gum tragacanth, q. s.	

Mix and form into pastilles.

**Vichot Fumigating Candles.**

Wood charcoal.....	100.0
Potassium nitrate.....	5.0
Naphthalene .....	10.0
Creosote .....	10.0
Carbolic acid.....	5.0
Crude petroleum.....	12.5
Aconite root.....	1.0
Tragacanth .....	2.0
Water, q. s.	

Mix, and make into 36 candles.

**Fumigating Tablets.**

Melt together 20 parts of benzoin, 20 of balsam of tolu, and 40 of balsam of peru, at as low a heat as possible, and add to the melted mass 150 parts of "Brettfield spirit." When the mixture is cool add 4 parts of acetic acid, 2 parts of tincture of musk, and 1 part of oil of rose, and mix the whole with enough magnesia or infusorial earth to make a plastic mass free from adhesiveness. Roll this out, and cut it into round tablets, about 3 to 5 centimeters in diameter, which are to be wrapped in tin foil. When laid upon a hot stove or other place having a proper temperature, these tablets diffuse their aroma very uniformly, and much more pleasantly than is usually the case when some other form of fumigation is used.

Brettfield spirit is made as follows: Digest 230 parts of orris root and 0.15 parts of musk in 2,000 parts of alcohol, filter after sufficient maceration, and add to the filtrate 60 drops each of oil of rose and oil of lemon, and 70 drops of oil of neroli.

**Fumigating Tablets.**

These tablets can be made by following any of the formulas given for pastilles, by cutting the stiff mass into tablets instead of forming it into cones.

**Fumigatory Powder and Paper.**

Potassium bisulphite.....	5 parts
Potassium nitrate.....	4 parts
Manganese peroxide, quantity sufficient to blacken the mixture.	

Pulverize separately and mix carefully. When fumigation is required, throw a few grams on a red-hot shovel. An agreeable odor is afterward produced by burning paper made as follows:

Potassium nitrate.....	1 part
Sugar .....	2 parts

Dissolve in 6 parts of water. Unsized paper is plunged into this solution and dried.

**Scott's Disinfecting Pastilles.**

Wax .....	50 parts
Sulphur .....	20 parts
Potassium nitrate.....	10 parts
Charcoal, in powder.....	10 parts
Flour paste.....	10 parts
Plaster of paris, a trace.	

Mix, and make into pastilles or bougies. To be burned on a saucer or otherwise.

**Disinfecting Pastilles.**

Wax .....	4 ounces
Carbolic acid.....	1 ounce
Thymol .....	½ ounce
Eucalyptol .....	½ ounce
Charcoal .....	2 ounces
Potassium nitrate.....	1 ounce

Flour paste, enough to make a stiff mass. Melt the wax, add the carbolic acid and thymol, eucalyptol, charcoal and potassium nitrate, stirring continuously; finally add the paste, and make into pastilles.

**Perfuming Halls and Theaters.**

Oil of lavender .....	4 ounces
Oil of bergamot .....	2 ounces
Oil of peppermint .....	20 drops
Oil of cloves .....	1 dram
Benzoic acid.....	1 dram
Alcohol, enough to make.	1 pint

Mix and dissolve. Spread liberally through the hall by means of an atomizer.

**DYES FOR WOOL.****Black Dye for Wool.**

For each pound of goods take logwood chips, ½ pound; extract of logwood, 1 ounce; madder, 1 ounce; fustic, ½ ounce. Boil the dyes in a sufficient quantity of water to cover the goods, for one hour; then boil the goods in the solution for one hour, stirring continually; take out and add copperas, 1 ounce, and boil one-half hour. Take them out again and add copperas, ½ ounce; sodium bicarbonate, 1 ounce, and run the goods another half hour. Wash out the goods in strong soapsuds. This makes a good, bright and durable black if the formula be closely followed.

**Black Dye for Wool.**

For 5 pounds of goods.—For the first bath, potassium dichromate, 8 ounces; alum, 6 ounces; fustic, 4 ounces. For the second bath, logwood, 4 pounds; barwood and fustic, of each 4 ounces; to which add, after the first lift, copperas, 4 ounces, and work for 15 minutes.

**Black Dye for Wool.**

For 7 pounds of goods.—Take of galls (bruised) ¼ pound; logwood chips, 1½ pounds; for the bath; boil or work the goods for two hours; take them out, and add ¼ pound copperas; when it is dissolved, work the goods through the liquor for at least two hours, keeping the bath nearly boiling; again take them out, wash, and air; then add 1 ounce more of copperas to the bath, and pass the goods through it for another hour; lastly air, rinse, and finish.

**Jet Black Dye for Wool.**

Boil for 90 minutes with 2½ per cent of potassium dichromate and 2 per cent of sulphuric acid. Lift, spread out and let lie till quite cold, and dye in a second water with 40 per cent of logwood, 8 per cent fustic and 1½ per cent blue vitriol. After boiling for an hour, wash, dry.

**Black Dye for Wool.**

Prepare a mordant of ¼ pound of copperas to 2 gallons of water. Also a dye of 2 pounds of logwood to 4 gallons of water.

Boil the goods in the first solution for half an hour, hang up for 15 minutes, then boil in the second solution for 1 hour. Dry and wash in soapsuds.



**Blue Dye for Wool.**

For each pound of goods, sulphuric acid, potassium prussiate, of each 2 ounces; crude tartar, 4 ounces. Put the ingredients in a kettle with sufficient water to cover the goods; heat, and, when lukewarm, put in the goods. Keep them in the solution for two hours and finally boil for one-half hour. The durability of this color may be increased by putting the dyed goods in clean water with 4 ounces of alum for each pound of goods, and boiling for one hour. If not dark enough, add logwood to suit and boil again.

**Blue Dye for Wool (Quick Process).**

For 2 pounds of goods.—Alum, 5 ounces; cream of tartar, 3 ounces; boil the goods in this for 1 hour; then throw the goods into warm water, which has more or less of the extract of indigo in it, according to the depth of the color desired, and boil again until it suits, adding more of the blue if needed. It is quick and permanent.

**Blue Dye for Wool.**

Triturate 1 pound of indigo with water and a little caustic potash; then add 2 pounds of lime, and afterwards  $2\frac{1}{2}$  pounds of iron sulphate in solution, stirring them well together.

The solution contains refined indigo, which is soluble in lime and alkalies. The cotton, linen, etc., to be dyed is repeatedly dipped in the solution, and afterwards rinsed in water acidulated with hydrochloric acid.

**Blue Dye for Wool.**

For each pound of goods take alum, 4 ounces; cream tartar, 2 ounces. Boil one hour. Empty the kettle, rinse the goods, and refill the kettle with clean water and bring to a scalding heat, adding of indigo blue or chemic blue, until the color suits.

**Dark Blue Dye for Wool and Yarns.**

Boil the material for one hour in a solution of  $2\frac{1}{4}$  ounces of alum in hot water, then take it out and throw away the bath. Now boil in the same boiler  $5\frac{1}{4}$  ounces of logwood in pure water for one-half hour; then lift out the bag which contained the logwood, and place the material, which has been previously washed, into the decoction, work it for one-half hour longer. The bath is now cooled by adding cold water, the material lifted out and  $2\frac{1}{4}$  ounces of potash are dissolved in the bath, when the material is worked in it until it has assumed a beautiful blue color.

**Dark Blue (Fugitive) for Wool.**

Boil clear water, and add  $5\frac{1}{4}$  ounces of blue vitriol,  $13\frac{1}{4}$  ounces of green vitriol, 1 pound of alum,  $13\frac{1}{4}$  ounces of crude tartar,  $2\frac{1}{4}$  ounces of tin salt, and 1 ounce of crude nitric acid. Boil the goods in the mixture for one hour. They are then lifted out and allowed to stand for one day and washed. Clean water is then heated in a boiler,  $2\frac{1}{2}$  pints of extract of logwood added, and the goods worked in this for one-half hour, during which the heat is raised to the boiling point. From  $27\frac{1}{2}$  to 33 pounds of woollen goods can be dyed by the above process.

**Dark Blue for Wool.**

For 5 pounds of wool, dissolve 2 ounces of potassium dichromate and 1 ounce of alum in sufficient water to cover the goods, by boiling. The wool, being free from grease, and wet, is put into the solution and boiled for one hour, stirring occasionally, lifted out, allowed to drip, aired and rinsed, while the

dichromate solution is thrown away and replaced with clean water. Add  $2\frac{1}{4}$  pounds of logwood chips, sewed up in a bag and boiled for one hour; the wool is then put in and the boiling continued for an hour more, after which it is to be lifted out, aired, washed and dried. Extract of logwood,  $6\frac{1}{2}$  ounces, can be substituted, if preferred, for the logwood chips, but the shade produced is not so desirable as that first suggested.

**Imperial Blue for Wool.**

Water ..... 1 gallon  
Sulphuric acid, a wineglassful.  
Imperial blue, 1 tablespoonful or more, according to the shade required.

Put in the silk, worsted or wool, and boil 10 minutes; wash in a weak solution of soap lather. Can be used for silk or worsted.

**Pigeon Blue for Wool.**

Work for 40 minutes in 2 ounces potassium dichromate, 4 ounces alum, and 1 ounce tartar; wash out in cold water, and then work for 30 minutes in another bath made up with 3 pounds of logwood; lift, and add 1 ounce verdigris; work for 15 minutes, wash and dry.

**Sky Blue for Wool.**

Water, 1 gallon; sulphuric acid, a wineglassful; sodium sulphate, in crystals, 2 table-spoonfuls; liquid extract of indigo, 1 tea-spoonful. Boil the goods about 15 minutes; rinse in cold water.

**Blue Dye for Wool.**

Logwood chips..... 2 pounds  
Brazil wood.....  $\frac{1}{2}$  pound  
Green vitriol.....  $\frac{1}{2}$  pound  
Water ..... 2 gallons

Boil together, strain, and boil the goods in the liquid.

**Brown for Worsted or Wool.**

Water ..... 3 gallons  
Potassium dichromate.....  $\frac{3}{4}$  ounce

Mix and boil the goods in this 40 minutes; wash out in cold water. Then take 3 gallons water, 6 ounces peachwood, and 2 ounces turmeric. Boil the goods in this 40 minutes; wash out.

**Brown for Wool.**

Work for an hour in a bath made up with 2 pounds of fustic, 2 pounds madder, 1 pound peachwood, and 4 ounces of logwood; lift and add 2 ounces copperas; work for 30 minutes, wash and dry.

**Brown (Chestnut) for Wool.**

Boil in pure water for five minutes  $\frac{1}{2}$  ounce of madder, a like quantity of sumach or  $\frac{1}{4}$  ounce of gallnuts,  $\frac{1}{2}$  ounce of tartar and  $1\frac{1}{4}$  to  $2\frac{1}{4}$  ounces of saunders wood. Place the goods in the bath and let them boil for one and one-quarter hours. Then lift them out, cool the bath by adding cold water; then dissolve  $\frac{1}{2}$  ounce of green vitriol in it, and work the wool in this for one-half hour longer.

**Brown (Coffee) for Wool.**

Boil in pure water for five minutes  $4\frac{1}{4}$  ounces of saunders wood,  $2\frac{1}{4}$  ounces of sumach or gallnuts and 1 ounce of green vitriol. The bath is cooled by adding cold water, the goods are placed in it and boiled slowly for half an hour, when they are taken out and the fire is extinguished;  $2\frac{1}{4}$  ounces of green vitriol are then dissolved in the bath, in which the goods are worked for three-quarters of an hour, cooled and rinsed.

**Dark Brown for Wool.**

Camwood, 4 ounces; fustic,  $\frac{1}{2}$  pound; boil one-half hour in sufficient water to cover the goods, then put in the goods and boil for one hour. Add blue vitriol,  $\frac{1}{2}$  ounce, and copperas, 2 ounces; boil for one hour and rinse.

**Brown (Dark) for Wool.**

Boil in water  $4\frac{1}{2}$  ounces of saunders wood and  $2\frac{1}{4}$  ounces of logwood; add  $2\frac{1}{4}$  ounces of sumach or gallnuts, and 1 ounce of green vitriol. Cool the mixture by adding cold water, then place the goods in it and let them boil slowly for one-half hour, when they are taken out. Should the dye not be dark enough, add 1 ounce more of green vitriol, and repeat the operation.

**Dark Snuff Brown for Wool.**

For 50 pounds of goods, take 10 pounds camwood, boil in a sufficient quantity of water for 20 minutes; dip the goods in the solution for three-quarters of an hour, take them out, and add to the dye 25 pounds of fustic. Boil the solution for 12 minutes and dip the goods three-quarters of an hour; add blue vitriol, 10 ounces; copperas,  $2\frac{1}{2}$  pounds; dip again 40 minutes, adding more copperas if the shade is required to be darker.

**London Brown for Wool.**

For each 20 ounces of goods take camwood, 7 ounces. Boil the goods and the camwood together for two hours; add blue vitriol, 2 ounces, and boil one-half hour. If not dark enough, add more blue vitriol and a little copperas and put in again. If a very dark brown is desired, add a little soft soap, or about an ounce of sodium bicarbonate.

**Madder Brown for Wool.**

For each pound of goods, 2 ounces each of madder and camwood; 4 ounces fustic; boil them in sufficient water to cover the goods for 15 minutes, then boil the goods in the solution for one-half hour. Take out and air them, boil again for one hour; now add to the solution blue vitriol and copperas, of each 1 ounce, and boil one hour more; if not dark enough, add more copperas, and rinse.

**Snuff Brown for Wool.**

For each pound of goods.—Camwood, 4 ounces; boil in sufficient water for 20 minutes, dip the goods for  $\frac{3}{4}$  hour; remove goods, and add to the liquid  $\frac{1}{2}$  pound of fustic. Boil for  $\frac{1}{4}$  hour and dip goods for  $\frac{3}{4}$  hour. Remove goods and add 1 ounce copperas and  $\frac{1}{4}$  ounce copper sulphate. Boil and dip again  $\frac{1}{2}$  hour.

**Brown Dye for Wool.**

Boil the goods in a decoction of oak bark, 1 pound to 4 gallons of water. If the goods are first passed through a mordant of alum (1 ounce to a gallon), the color will be more permanent.

**Brown Dye for Wool.**

A decoction of walnut peels (1 pint to 4 gallons), dyes wool and silk a brown color, which is brightened by a mordant of alum.

**Brown Dye for Wool.**

A decoction of horse-chestnut peels (fresh) gives wool and silk a brown color. A mordant of chloride of tin produces a bronze, and sugar of lead a reddish brown shade.

**Gray (Fast Dark) for Wool.**

The cloth is first grounded blue with indigo, and then boiled in a solution of  $8\frac{3}{4}$  ounces of blue vitriol,  $4\frac{1}{2}$  ounces of tartar, and some indigo tincture.

**Claret for Wool.**

Water .....	3 gallons
Cudbear .....	12 ounces
Logwood .....	4 ounces
Old fustic.....	4 ounces
Alum .....	1-3 ounce

Boil the goods in the mixture 1 hour. Wash. This will dye from 1 to 2 pounds of material.

**Crimson for Wool.**

Alum, cream of tartar, of each 1 ounce; cochineal,  $\frac{1}{2}$  ounce; goods, 1 pound. Put  $1\frac{1}{2}$  gallons soft water in a kettle, add the cochineal, well pulverized, bring the water to a boil, enter the goods and boil for one-half hour. Take out the goods and air them. Cool the dye and add the alum and cream of tartar, and enter the goods again and boil one hour. If not dark enough, add a little sodium bicarbonate. Wash, clean and dry.

**Gray (Dark) for Wool.**

Put one pound of logwood and  $13\frac{1}{4}$  ounces of sumach in a small bag and boil them for one-half hour in a boiler full of water. Then take the bag out, place 13 pounds of cloth, previously moistened with hot water, in the bath, and let it boil for 1 hour, when it is lifted out. The bath is then cooled by adding cold water;  $8\frac{3}{4}$  ounces of green vitriol are added and the goods worked in it for one-half hour, and then boiled until they have acquired the desired shade.

**Green for Wool.**

For 11 pounds.—Add to water, 26 ounces ground fustic, boil up, remove the wood, dissolve  $\frac{3}{4}$  pounds alum and 1 pound argols in the bath, stir well up, and add 3 ounces extract of indigo, let dissolve, cool, enter the yarn, and dye for half an hour at a boil.

**Bottle Green for Wool.**

Work the goods for an hour in a bath with 2 ounces potassium dichromate and 4 ounces alum; lift out and expose to the air till cold; then work for an hour in a second bath with 3 pounds fustic,  $1\frac{1}{2}$  pounds logwood; wash out and dry.

**Green (Brownish Olive) for Wool.**

Boil  $2\frac{1}{4}$  ounces of fustic and 1 ounce of madder, then add to the fluid  $2\frac{1}{4}$  ounces of tartar and 1 dram of gallnuts. Place the goods in the bath, let them boil for one and one-half hours, take them out and cool them in the open air. The bath is cooled by adding cold water, and compounded with  $\frac{1}{2}$  ounce of green vitriol, when the goods are placed back in it, worked for one-half hour, cooled and rinsed.

**Olive Green for Wool.**

Work for an hour in a bath with 4 ounces chrome, 2 ounces alum; lift and expose to the air, then work for an hour in a bath with 3 pounds fustic,  $1\frac{1}{2}$  pounds camwood, 1 pound logwood; lift out and dry.

**Green Dye for Wool.**

For 1 pound of goods.—Fustic, 1 pound; alum,  $3\frac{1}{2}$  ounces; water, enough to cover the goods. Boil until extracted, then soak the goods till yellow. Remove the fustic and add extract of indigo, a little at a time, until the desired green is obtained.

**Green Dye for Wool.**

For 50 pounds of goods use 50 pounds of fustic and 11 pounds of alum. Extract by boiling, then put in the goods, and add indigo in small quantities at a time until the color is satisfactory.

**Green Dye for Wool.**

Boil together yellow oak and hickory bark, and add a small quantity of extract of indigo, until the desired color is obtained.

**Lilac for Wool.**

Dissolve  $\frac{3}{4}$  ounce of crystallized tartar and  $2\frac{1}{4}$  ounces of alum in hot water, add  $\frac{1}{2}$  ounce of pulverized cochineal to the solution, work the goods in the bath for one-half hour, and then boil them for one-half hour.

**Mulberry Color for Wool.**

For 11 pounds of goods.—Boil for an hour and a half with  $2\frac{3}{4}$  ounces potassium chromate, 7 ounces alum,  $1\frac{3}{4}$  ounces blue vitriol and  $5\frac{1}{2}$  ounces prepared tartar. Let cool in the solution of dye, or rinse at once. Then dye in a water with 30 ounces logwood,  $5\frac{1}{2}$  pounds camwood and 1 pound cudbear, boiling for 75 minutes.

**Red for Wool.**

For 40 pounds of goods.—Make a tolerably thick paste of lac dye and sulphuric acid, and allow it to stand for a day. Now take 4 pounds cream of tartar,  $2\frac{1}{2}$  pounds solution tin chloride, and 3 pounds of the above paste, make a hot bath with sufficient water, and enter the goods for three-quarters of an hour. Clean, rinse and dry.

**Red Madder for Wool.**

To 100 pounds of fabric, use 20 pounds of alum, 5 pounds of tartar, and 5 pounds solution of tin chloride. After these are dissolved, enter the goods, and let them boil for two hours; then take them out, let cool, and lay over night. Into fresh water stir 75 pounds of good Holland madder. Enter the fabric at  $130^{\circ}$  F., and bring the temperature up to  $200^{\circ}$  F. in the course of an hour, during which time it must be handled well to prevent spotting. Rinse and dry.

**Red Madder for Wool.**

For each pound of goods use alum, 4 ounces; cream of tartar, 2 ounces; Dutch madder,  $\frac{1}{2}$  pound; bran,  $\frac{1}{4}$  bushel.

Put the bran in a clean barrel and pour on hot water enough (the bran will take up considerable), let stand until it sours, strain, and press out, using the liquid for the dye. Boil the goods for two hours in the alum and cream of tartar with sufficient water to cover them well, then empty the kettle and rinse the goods. Fill the kettle with the bran water, and put in the madder. As soon as it is lukewarm, put in the goods and stir or handle them often for one-half hour; then take them out and air them. Put in again and gradually increase the heat so that in one hour it may just reach the boiling point. The goods are now taken out and washed thoroughly in strong soapsuds, rinsed well, and dried.

**Common Red for Wool.**

Make a decoction of 3 pounds sumach, and put the goods in at once; let them steep over night; wring out and work for an hour in a mixture of 4 or 5 ounces solution tin chloride to every gallon water; wring out and wash well; then work for half an hour in a decoction of 3 pounds lima wood and 1 pound fustic, using the decoction as hot as the hand can bear it; lift, and add 4 ounces of the chloride of tin solution, then work for 15 minutes more; wash and dry out.

**Pink for Wool.**

For 2 pounds of goods.—Powdered cochineal, 1 ounce; cream of tartar, 1 ounce; alum, 1 pound. Dissolve the alum in boiling water, dip the

goods in it for one hour. Then dip them in the solution of cochineal and cream of tartar. Finally wash in clear water and dry.

**Scarlet for Wool.**

Work for an hour in a bath with 1 pound of tartar, 2 ounces dry cochineal, 8 ounces sumach and 8 ounces fustic; wash out and dry.

**Scarlet for Wool.**

For 1 pound of goods.—Boil  $1\frac{1}{4}$  ounces cream of tartar in water in a block-tin vessel; add  $1\frac{3}{4}$  ounces solution of tin chloride; boil for 3 minutes, then boil the goods in it for 2 hours; drain and let the goods cool. Next boil  $\frac{1}{4}$  ounce cream of tartar for a few minutes in some water; add to it 1 ounce powdered cochineal, boil for 5 minutes, adding gradually 1 ounce solution of tin chloride, stirring well all the time; then put in the goods and dye immediately.

**Scarlet for Wool.**

Cochineal, solution of tin chloride, of each 1 ounce; cream of tartar,  $\frac{1}{2}$  ounce; goods, 1 pound. Put in a clean iron kettle  $1\frac{1}{2}$  gallons of soft water for each pound of goods. When it is lukewarm put in the cochineal, which should be well pulverized. When scalding hot, add the cream of tartar and the solution of tin chloride, and stir well. Boil for one hour, stirring constantly all the time to prevent spots. Rinse in clean water and dry.

**Scarlet for Wool.**

Goods, 40 pounds.

Zinc sulphate..... 5 pounds  
Aniline scarlet..... 1 pound

Dissolve the zinc sulphate in sufficient boiling water, leave the goods in it for 10 minutes, then add the color dissolved in 3 gallons of water and filtered, and boil for 15 minutes.

**Wine Color for Wool.**

For each pound of goods take camwood, 7 ounces, and boil one-half hour; put in the goods and boil one hour; then add blue vitriol, 3 ounces, and boil one-half hour. If not dark enough add more blue vitriol and boil again.

**Snuff Color for Wool.**

For each pound of goods, camwood, 2 ounces, and fustic,  $\frac{1}{2}$  pound. Boil the camwood and fustic for one-half hour in sufficient water to cover the goods; then put them in and boil one hour. Take out the goods and add blue vitriol,  $\frac{1}{2}$  ounce; copperas, 1 ounce; boil one hour and rinse well.

**Tan for Wool.**

Camwood, 4 ounces; madder, 2 ounces; for each pound of goods. Boil the dyes in a sufficient quantity of water for ten minutes; then put in the goods and boil one hour, afterwards adding  $\frac{1}{2}$  ounce copperas; boil one-half hour longer, and if not dark enough add more copperas and boil again.

**Yellow for Wool.**

Alum, 4 ounces; cream of tartar, 1 ounce; fustic, 1 pound. Sufficient for 1 pound of goods. Boil the goods one hour in sufficient water to cover them well, to which the alum and cream of tartar have been added. Then empty the kettle and fill with cool water, put in the fustic and raise to the boiling point, put in the goods and boil for one hour.

**Yellow (Dark) for Wool.**

Place  $3\frac{3}{4}$  pounds of quercitron bark in a bag, boil it in a tin boilerful of water for quarter hour. Then add 2 pounds of alum, 1 ounce of



tartar, and  $8\frac{3}{4}$  ounces of solution of tin chloride. Now boil the goods in the bath for 8 to 10 minutes, when they are taken out. Cool the bath by adding cold water, work the wool.

#### Deep Yellow for Wool.

To a tub of cold water add 1 pound lead acetate, and 1 pound lead nitrate in solution; work the goods in this for 30 minutes, and wring out; then to a tub of warm water, add 12 ounces potassium dichromate and work the goods in it 15 minutes; expose to the air for half an hour, then pass again through both solutions, working them the same time in each as before, and expose to the air for one hour; then pass them through the lead solution; wring out, wash dry. If the color is not deep enough they may be passed through the solutions again, observing the same rules.

New woolen goods are prepared for dyeing by first steeping the cloth or yarn over night in soap lye, and then scouring them through clean soap to remove all oil or grease. Instead of soap a scouring mixture may be prepared with 1 pound soft soap, and 1 pound common soda in 10 gallons water. Goods to be re-dyed, must first be steeped and scoured in soap and soda.

#### Yellow for Wool.

Aniline yellow, 1 pound, is dissolved in 2 gallons alcohol, and gradually added to the hot water in which the goods are soaking. The color is improved and brightened by adding a little sulphuric acid to the aniline solution.

#### Violet for Wool.

A good violet dye may be given by passing the goods first through a solution of verdigris, then through a decoction of logwood and finally through a solution of alum.

### DYES FOR COTTON.

#### Black for Cotton.

For 10 pounds of goods.—Prepare a lukewarm bath of 1 pound of dry extract of logwood and  $1\frac{1}{4}$  quarts of water. Dissolve further 2 pounds of dry extract of logwood in 2 gallons of water. Now dye 2 pounds of the goods in this dye-bath, take it out, wring it, and let it dry in the open air. One-quarter of the first solution is then added to the bath, and the second one-fifth of the goods treated therein. The same process is repeated with the remaining goods until all the solution has been used.

#### Black for Cotton.

Prepare the bath by dissolving  $8\frac{3}{4}$  ounces of potassium dichromate and  $2\frac{1}{2}$  ounces of crystallized soda in 2 gallons of water. After the first one-fifth part of the goods has been taken from the dye-bath one-quarter of the solution is added to it; the next portion of the goods is added, and so on.

#### Black for Cotton.

The goods are steeped in a mordant of iron acetate, worked well, and then passed through a bath of madder and logwood for two hours. This is less permanent than the preceding.

#### Black for Cotton.

The goods, previously dyed blue, are steeped for about 24 hours in a decoction of gallnuts or sumach, then drained, rinsed in water, and passed through a bath of iron acetate for a quarter of an hour; they are next again rinsed in water, and exposed for some time to the air; after which they are passed a second time

through the bath, to which a little more iron liquor is previously added. The whole process is repeated, if necessary, according to the intensity or the shade of black desired.

#### Black for Cotton.

For 10 pounds of cloth.—The goods are put into a boiling bath made of 3 pounds of sumach, and allowed to steep with occasional "working," until the liquor is perfectly cold; they are next passed through lime water, and, after having drained for a few minutes, immediately transferred to and worked for an hour in a warm solution of 2 pounds of copperas; after free exposure to the air for about an hour they are again passed through lime water, and, after draining, "worked" for an hour in a bath made with 3 pounds of logwood, and 1 pound of fustic; they are then lifted, and  $\frac{1}{4}$  pound of copperas being added, they are returned to the bath, worked well for about 30 minutes, and finished. Good and deep.

#### Aniline Black for Cotton.

For each pound of cotton goods take 3.15 ozs. copper sulphate dissolved in water, made very feebly acid with hydrochloric acid. Give seven turns and wring well. Dissolve  $\frac{1}{2}$  pound sodium hyposulphite per gallon water at  $120^{\circ}$  F., five turns, and wash out. Dye cold in potassium chlorate, 3 ounces; ammonium chloride, 3 ounces; aniline chloride,  $\frac{1}{2}$  pound, in sufficient water, six turns quickly and wring well. Hang up even at  $77^{\circ}$  F. for forty-eight hours, and raise to  $84^{\circ}$  F. Take through either dichromate or soda lye and wash well. If reddish when dry, take through very weak solution of chlorinated lime.

#### Black for Cotton.

Potassium citrate.....	1 pound
Ammonium chloride.....	1 pound
Copper chloride.....	1 pound
Aniline .....	1 pound
Hydrochloric acid.....	1 pound
Water .....	4 gallons

Mix the aniline and acid and add to the water, then add the other ingredients and dissolve. Allow the goods to remain in the solution 1 hour, dry at a low temperature and wash afterwards.

#### Sky Blue for Cotton.

For 60 pounds of goods.—Copper sulphate, 5 pounds. Boil a short time, then enter the goods, dip three hours and transfer to a bath of strong lime water. A fine brown color will be imparted to the goods if they are then put through a solution of potassium prussiate.

#### Blue for Cotton.

Steep the goods in an alum mordant, then in a solution of  $\frac{1}{4}$  pound of Prussian blue in 2 gallons of water; let the goods remain in the dye for 24 hours.

#### Blue for Cotton.

For 5 pounds of goods.—Potassium dichromate,  $\frac{1}{4}$  pound, dissolved in boiling water; leave the goods in for 2 hours, take out and rinse. Make a decoction of 4 pounds of logwood, dip in this for 3 to 4 hours, then wash out and dry.

#### Brown for Cotton.

Catechu colors cotton brown. Green copperas used as a mordant darkens the color; aluminium acetate as a mordant brightens the color.

#### Brown for Cotton.

Steep in a mordant of aluminium acetate and iron acetate, and dye in a bath of madder.

**Buff for Cotton.**

Annatto,  $\frac{1}{4}$  pound, and potash,  $\frac{1}{2}$  pound, boiled in 3 gallons of water. Boil the goods in this for 10 minutes. Stir well. Put in cold water and rinse.

**Cinnamon Brown for Cotton.**

First use a mordant of alum, then a bath of madder, and follow with a bath of fustic, to which a little iron sulphate has been added.

**Crimson for Cotton.**

For 10 pounds.—Red goods are boiled in clean water. Place them in a bath of 2 pounds of sumach. Let them remain for 12 hours, then place them in a bath of tin salt of  $3^{\circ}$  B. Allow them to remain for one hour, when they are winched and brought into a bath of  $3\frac{1}{4}$  pounds of Brazil wood. Here they remain for several hours, when they are winched and dried.

**Common Drab for Cotton.**

Work 10 pounds of goods for 15 minutes in a decoction of  $\frac{1}{2}$  pound sumach; lift, and add 1 ounce coppers in solution, and work 15 minutes more; wash out in a tub of cold water, and then work 15 minutes in a decoction of 4 ounces fustic, 2 ounces lima wood and 1 ounce logwood; lift, and add 1 ounce alum in solution; work 10 minutes; wring out and dry. A great variety of tints can be produced by varying the proportion of the lima wood, fustic and logwood; and lighter or darker shades may be produced by diminishing or increasing the quantities of sumach and coppers.

**Dove or Slate Color for Cotton.**

Boil a teacup of black tea in an iron pot, adding a teaspoonful of coppers. The depth of color will depend on the quantity of water used. Dye the articles in this and then hang them up to drain, finally rinsing out in soap-suds.

**Slate Color for Cotton.**

Work the goods for half an hour in a bath with 8 ounces logwood and 1 ounce fustic; lift, and add 1 ounce alum and  $\frac{1}{2}$  ounce coppers in solution; work for half an hour; wash and dry. For a bluer tint, use less alum and more coppers; for more purple, use less fustic and more alum, etc.

**Gray (Silver) for Cotton.**

Boil the goods in clean water and bring them into a wooden vat containing hot water and  $8\frac{1}{4}$  ounces of catechu boiled in  $3\frac{1}{2}$  quarts of clean water. Work the goods in this bath for half an hour and wring them. Now fill a vat with clean cold water; add to this 2 ounces of green vitriol dissolved in hot water. Work the goods in this until they have acquired the desired color, then rinse and dry.

**Green for Cotton.**

For 40 pounds of goods, use fustic, 10 pounds; blue vitriol, 10 ounces; soft soap,  $2\frac{1}{2}$  quarts, and logwood chips, 1 pound 4 ounces. Soak the logwood overnight in a brass vessel, put it on the fire in the morning, adding the other ingredients. When quite hot it is ready for dyeing; enter the goods at once and handle well. Different shades may be obtained by letting part of the goods remain longer in the dye.

**Green for Cotton.**

Boil the goods in a mordant of alum, and afterwards in a dye of 2 gallons of water with 2 ounces of indigo and 2 ounces of turmeric. Boil until the desired tint is obtained.

**Orange for Cotton.**

For each pound of goods dissolve 6 ounces of coppers in 3 gallons of water, make the solution as hot as can be handled with the hand; having first dissolved  $\frac{1}{2}$  pound potassium dichromate in a tub, dip the goods first into one solution then into the other, until the desired shade of color is produced. By washing, the color becomes brighter.

**Orange for Cotton.**

For 40 pounds of goods use 20 pounds of sugar of lead, dissolve in water, boil, and dip the goods in it for 2 hours; make a fresh dye with 4 pounds of potassium dichromate and 1 pound of madder and immerse until the desired color is obtained.

**Pink for Cotton.**

For 40 pounds of cotton use of redwood 20 pounds, tin chloride,  $2\frac{1}{2}$  pounds. Boil the redwood in a sufficient quantity of water for one hour, turn off into a large vessel and add the tin chloride. Put in the goods, let stand a few minutes (5 or 10), and a nice pink will be produced. The dye produces quite a fast color.

**Red for Cotton.**

First cleanse or scour the goods by alkaline baths, after which steep in oily liquors brought to a creamy state by the addition of a little sodium carbonate; a bath of sheep's dung is next often used as an intermediate or secondary step; the oleaginous bath, and the operation of removing the superfluous or loosely adhering oil with an alkaline bath, is repeated two or three times, due care being taken to dry the goods thoroughly after each distinct process; then follow the distinct operations of galling, aluming, maddering, and brightening, the last four removing the dun-colored principle, by boiling at an elevated temperature with alkaline liquids and soap; the whole is generally concluded with treatment by solution of tin chloride. In this way are given the most brilliant reds on cottons.

**Light Straw Color for Cotton.**

To a tub of cold water add 4 ounces lead acetate in solution, work the goods in this for 15 minutes, and wring out; then work for 10 minutes in another tub of water containing 2 ounces potassium dichromate; wring out, and work again in the lead solution for 10 minutes; wash and dry.

**Tan Color for Cotton.**

In a pailful of water boil a pailful of equal parts of sumach, and yellow and white oak barks for 1 or 2 hours; steep the goods in this solution for 4 hours, then dip the goods in coppers water and lime water, then into the dye solution again, and again into the coppers and lime water as before, until the desired shade is produced.

**Yellow for Cotton.**

Sugar of lead  $1\frac{1}{4}$  ounces, dissolved in hot water, potassium dichromate, 1 ounce, dissolved in cold water. Dip the goods (1 pound) first into the hot lead water, then wring out and dip into the cold dichromate water, alternating from one to the other, wringing each time, until the color suits.

**Yellow for Cotton.**

Dissolve 1 ounce of sugar of lead and  $\frac{1}{2}$  ounce of alum in warm water; place 1 pound of material in this bath, work it for some time, and finish the dyeing process in a solution of potassium chromate.

**Yellow for Cotton.**

For 3 pounds of goods dissolve in 6 quarts of soft water, 6 ounces of sugar of lead; dissolve 3 ounces of potassium dichromate in another vessel and dip the goods, 1 piece at a time, into the sugar of lead, and then into the dichromate; dry and rinse, and it is done.

Cotton cloth is prepared for dyeing by first steeping it over night in an alkaline lye, which loosens and removes the oil, grease, and dressing which it has obtained in weaving; it is then thoroughly rinsed in clean water. If the cloth is to be dyed a dark color, no further preparation is needed; but if a light shade is desired, the fabric must be bleached.

**Bronze for Cotton.**

Manganese sulphate dissolved in water with a little tartaric acid imparts a beautiful bronze tint. Then pass the goods through a weak lye of potash and afterwards through a bath of chloride of lime.

**Cheap Black for Mixed Cotton and Wool.**

Boil in a bath of logwood extract, 25 per cent.; fustic extract, 4 per cent.; soda, 13 per cent.; copper sulphate, 8 per cent. Work at 120° F. for some minutes, then raise to boiling, until a good black is obtained, after which enter in a new bath containing potassium dichromate, 4 per cent.

**Black for Mixed Goods.**

Black on common mixed carpet yarn for running, 100 pounds goods or yarn.—Prepare 25 pounds extract of logwood, 8 pounds blue vitriol, 8 pounds sal soda. Boil up, enter goods, give 3 turns slowly, take up, and wash.

(Note)—1. The second 100 pounds requires only 15 pounds extract of logwood, 6 pounds blue vitriol, and 6 pounds sal soda. 2. The third 100 pounds requires only 10 pounds extract of logwood, 4 pounds blue vitriol, and 4 pounds sal soda, and keep it for future use. 3. This is a fair black, and size may be worked with it.

**Black for Mixed Goods.**

Boil in a decoction of logwood (1 pound to 2 gallons), rinse in clean water to remove the chips; then boil in a solution of copperas (4 ounces to 1 gallon), and lastly in alum water (1 ounce to 1 gallon).

**Blue for Mixed Goods.**

Give the goods a mordant of alum, or of aluminum acetate ("red liquor"), rinse them well, and boil in a bath of logwood, to which a small quantity of blue vitriol has been added; lastly rinse and dry.

**Blue for Mixed Goods.**

Boil the goods for a short time in a bath of logwood; then add to the solution, tartar and verdigris, in the proportion of 1 ounce to every pound of logwood employed; and again boil for a short time.

**Blue for Mixed Goods.**

Give the goods a mordant of tartar; lift, add a little potassium chromate; again work for 15 or 20 minutes, and rinse; next boil in a bath of logwood, adding towards the last a few grains more of the chromate, again boil and finish. The whole quantity of chromate used should not exceed  $\frac{1}{4}$  ounce to each pound of logwood taken for the bath. Very dark.

**Blue for Mixed Goods.**

For 3 pounds of goods dissolve 3 ounces of copperas in sufficient water to cover the goods and boil the goods therein, using an iron

kettle (not a brass kettle). Dissolve 2 ounces potassium prussiate in sufficient water and add to it after the prussiate is dissolved, 1 ounce sulphuric acid; dip the goods in this solution, also repeating if necessary. A green may be made from this color by dipping a yellow in it.

**Blue for Mixed Goods.**

Boil in a solution of potassium dichromate ( $\frac{1}{2}$  ounce to 2 gallons). Then boil in a decoction of logwood (1 pound to 2 gallons). Finally rinse in clear water.

**Garnet for Half Woolens.**

Boil for half an hour with water containing  $\frac{6}{4}$  ounces potassium dichromate,  $\frac{4}{4}$  ounces oil of vitriol, and 2 ounces blue vitriol. Rinse and enter in a water at 122° F., containing magenta,  $\frac{1}{4}$  ounces, and methyl violet  $\frac{1}{4}$  ounce. Heat to a boil, lift, wash, and rinse.

**Gray for Half Woolen Goods.**

For 11 pounds of goods.—Prepare for 3 hours with 2 pounds 12 ounces sumach, wring out and boil for three-quarters of an hour with  $\frac{4}{4}$  ounces logwood and 1 ounce fustic. Sadden in the same beck with  $\frac{1}{4}$  ounces copperas at 200° F.

**Green Fustic for Mixed Goods.**

For 50 pounds of goods, 50 pounds of fustic with 11 pounds of alum; soak in water until the color is extracted, put in the goods until of a good yellow color, remove the chips, and add extract of indigo in small quantities at a time, or until the color produced is satisfactory.

**Green Dyes for Mixed Goods.**

Dissolve 1 pound of aniline green in a gallon of water and add slowly to a bath of boiling water in which the goods are put. Then add 2 gallons of water with 1 ounce of sulphuric acid. Boil for 10 minutes, rinse and dry. The solutions of aniline dye should always be filtered to avoid specks.

**Aniline Red for Mixed Goods.**

Aniline red produces a color varying from the deepest crimson to a very brilliant and beautiful rose pink, according to the strength of the dye. Enclose the aniline in a small muslin bag, and, having a kettle (tin or brass) filled with moderately hot water, place the bag in the water, taking care to rub it upon the bottom and sides of the kettle until the color is extracted through the cloth. Then immerse the articles to be colored, and in a short time they are done. The dye is so readily absorbed that care is required to prevent spotting. No mordant is required, although it improves the color to wring the goods out of strong soapsuds before putting them in the dye. It is a permanent color for woolen or silk.

**Red for Half Woolens.**

For 11 pounds of goods.—Boil for an hour with 17 ounces white argol and the same weight of argol. Dye at a boil for 15 minutes with 4 pounds 14 ounces peachwood and  $2\frac{1}{4}$  pounds fustic. Rinse, steep for fifteen minutes in the decoction of 2 pounds 3 ounces fustic, and work for the same length of time in red cotton spirits at 4° Tw. Let drain and cotton dye to shade in the cold decoction of 17 ounces peachwood and the same weight of fustic.

**Reddish Brown for Mixed Goods.**

Boil in a decoction of oak bark (1 pound to 4 gallons) and afterwards in a solution of alum (1 ounce to 1 gallon). Rinse and dry.



**Scarlet for Worsted or Wool.**

Three gallons water, 2 ounces dry cochineal, 1 ounce cream of tartar, 1 wineglassful solution of tin nitrate; boil the goods one hour. To give the goods a yellower hue, add a little young fustic to the above mixture. Wash out as before.

**DYES FOR LINEN.****Prussian Blue for Linen.**

For 50 pounds of goods.—Add to a water slightly warm, 3 pounds iron nitrate and 2 pounds tin chloride crystals. Enter and give five turns, pass into a fresh water made up with a solution of 2 pounds yellow potassium prussiate and 1 pound sulphuric acid. Lift, drain, and re-enter in the iron bath. If not dark enough, take again through the prussiate. Lift, rinse and dry.

**Catechu Fast Brown for Linen.**

For 50 pounds of goods.—Steep the goods over night in a decoction of 10 pounds catechu or gambier. Lift, work in a hot solution of potassium dichromate, lift, rinse and dry.

**Brown for Linen.**

Boil in a solution of alum (1 ounce to 1 gallon) then in a decoction of catechu (1 pound to 5 gallons) and finally in a solution of potassium dichromate (2 ounces to 1 gallon). Rinse and dry.

**Greenish Gray for Linen.**

For 22 pounds of goods.—Dissolve 17 ounces soda ash in water, and boil for an hour. Wash, and take through a fresh water with 17 ounces sulphuric acid, and wash again. Stir up 2 pounds 3 ounces of the best chlorinated lime to a uniform paste, and allow to settle. Soak the goods in the clear liquid for six hours, turning occasionally. Lift, and take through a fresh water to which 35 ounces hydrochloric acid have been added. Rinse well. Boil out  $8\frac{1}{4}$  ounces sumach and 35 ounces bark in sufficient water. Enter the goods for an hour in the clear liquid at  $122^{\circ}$  F., press, and pass into a fresh water with  $8\frac{1}{4}$  ounces copperas. Work here for fifteen minutes, and take through water. Make up a water at  $122^{\circ}$  F. with 35 ounces alum; enter the goods, and add by degrees very small quantities solution of bark and extract of indigo till the desired shade is obtained. Rinse and dry.

**Iron Gray for Linen.**

For 11 pounds of goods.—Work for an hour in a boiling water with 35 ounces sumach. Wring, and work for another hour in a fresh water with the same weight of copperas.

**Light Green for Linen.**

For 10 pounds of goods.—Digest for six hours with  $6\frac{1}{2}$  pounds sumac. Wring out and enter for half an hour in the following mordant: Alum, 500 grains; sugar of lead, 250 grains. Wring out and dye with 100 grains aniline iodine green.

The properties of linen, as regards its behavior with mordants and dye wares, do not differ essentially from those of cotton. It is, however, less able to resist strong acids and chemicals. The proportion of linen goods dyed is but small in comparison with those sold in the white state.

**Green for Linen.**

Boil in a decoction of sumach (4 ounces to 1 gallon), then in a solution of borax (2 ounces to 1 gallon) and finally in a solution of aniline green (4 ounces to 1 gallon), filtered. Rinse and dry.

**DYES FOR SILKS.****Black for Silk.**

For 100 pounds of silk.—Boil 22 pounds of bruised Aleppo galls for 2 hours in 90 to 100 gallons of water, adding boiling water from time to time to compensate for that lost by evaporation. To the clear bath add 32 pounds of copperas, 7 pounds of iron filings, and 21 pounds of dextrin; digest, with agitation, for 1 hour, and when the ingredients are dissolved, pass the silk (previously prepared, "galled" with one-third of its weight of gall-nuts) through the bath for about an hour; then rinse and air it well; next leave it in the dye bath for 6 to 12 hours; this immersion or steep may be repeated if necessary.

**Black for Silk.**

For 5 pounds of silk.—For the mordant use  $\frac{1}{2}$  pound of copperas; rinse and air; for the "dye bath" a decoction of 4 pounds logwood to which  $\frac{1}{2}$  pint of stale urine has been added; after lifting the goods, add 2 ounces more of copperas to the bath, and work for 15 minutes as before. By adding 2 ounces of dyer's iron nitrate to the mordant the same ingredients will give a deep black; and by substituting a little white soap for the urine, and omitting the addition of copperas to the logwood bath, it will give it a blue black. The last may also be produced by first dyeing the goods deep blue as with potassium prussiate, and omitting the urine and soap, in which case only half of the logwood will be required.

**Black for Silk.**

A bath of nutgalls is given for 12 to 36 hours, occasionally working the goods therein; they are next taken out, rinsed, and well aired, after which they are passed for a few minutes through a bath containing iron sulphate, and are then again drained, rinsed and aired. The steep in the nutgall bath may be repeated if necessary, followed, as before, by the iron bath previously replenished with a little fresh copperas. The whole quantity of galls to be taken for 1 pound of silk varies with their quality from  $\frac{1}{2}$  to  $\frac{3}{4}$  pound, that of the copperas (for the first bath), from 3 to 4 ounces.

**Black for Silk.**

Let the material remain in a mordant solution of iron nitrate of  $40^{\circ}$  B. for  $\frac{1}{2}$  hour; then rinse and dye it in a decoction of  $3\frac{3}{4}$  pounds of logwood and 1 pound of fustic. Let it remain in the dye bath for  $\frac{1}{2}$  hour.

**Black for Silk.**

Boil in a decoction of nutgalls (1 pound to 2 gallons) add afterwards in a mordant of iron sulphate (4 ounces to 2 gallons). If not dark enough, repeat the operation. Rinse and dry.

**Black for Silk.**

Vinegar .....	2 gallons
Logwood .....	2 pounds
Nutgalls, bruised.....	2 ounces

Boil all together 30 minutes. Drain and boil the goods in it, until the desired shade appears. Rinse and dry.

**Black for Silk.**

Boil in a solution of blue vitriol (1 ounce to 1 gallon), then in a decoction of logwood (1 pound to 2 gallons), dip 1 hour, air and dip again. Finally wash in strong soapsuds, rinse and dry.

**Blue (Raymond's) for Silk.**

Mordant with solution of iron nitrate of 1 to 2° B., rinse the material, place it in a hot soap bath, and rinse again; then it is dyed with potassium prussiate and sulphuric acid. It is then rinsed, brightened in cold water containing some ammonia water, and finally rinsed.

**Blue for Silk.**

Dip the goods in a bath of copperas (1 pound to 1 gallon). Then in a bath of alum with indigo extract (alum 3 ounces, indigo 1 ounce to 1 gallon). More indigo extract in water must be added in small quantities until the right shade is obtained.

**Blue Purple for Silk.**

Boil the goods in a mordant of potassium dichromate (4 ounces) and alum ( $\frac{1}{2}$  ounce) to one gallon of water for 1 hour. Then in a decoction of logwood (1 pound to 2 gallons) for 1 hour longer. Use more or less logwood to produce the color desired.

**Brown for Silk.**

Dissolve annatto, 1 pound; pearlsh, 4 pounds; in boiling water, and pass the silk through it for two hours; take out, squeeze well and dry; next give it a mordant of alum, pass through a bath of Brazil wood, and afterwards through a bath of logwood, to which a little copperas has been added. Wring out and dry, and afterwards rinse well.

**Fast Brown for Silk.**

Mordant in a mixture of 3 parts of aluminum acetate and 2 of iron acetate, each 5° B. then rinse and dry the material and dye with madder.

**Brown for Silk.**

Dip the goods in a solution of blue vitriol (2 ounces in 1 gallon) for 15 minutes, then run them through lime water. Then dip them in a solution of potassium prussiate (1 ounce to one gallon). Rinse and dry.

**Brown for Silk.**

Boil in a decoction of the peels of green walnuts, bruised (4 ounces to 1 gallon), and dip them afterwards in a solution of alum (1 ounce to 2 gallons). Rinse and dry.

**Ruby and Maroon for Silk.**

Take 1 pound cudbear, and boil in a bag for 15 minutes; and work the silk in this for  $\frac{1}{2}$  hour.

For a bluish tint, lift, and add 3 ounces ammonia water; work 10 minutes, wring and dry.

**Crimson for Silk.**

Boil in an alum mordant (1 ounce to 1 gallon), then in a bath of cochineal (3 ounces), nutgalls, bruised (2 ounces), cream of tartar ( $\frac{1}{4}$  ounce), in 2 gallons of water. Boil these articles together for 10 minutes and allow to cool. Strain or filter and put in the goods, boil for 1 hour.

**Scarlet for Silk.**

Put aniline scarlet in a small muslin bag. Boil in water (2 ounces to 1 gallon). Take the bag out and immerse the goods, which should have been washed in strong soapsuds before.

**Yellow for Silk.**

For one pound of silk.—Alum, 3 ounces; sugar of lead,  $\frac{3}{4}$  ounce; immerse the goods in the solution over night; take out, drain, and make a new dye with fustic, 1 pound; dip until the required color is obtained.

**Yellow for Silk.**

Boil in a decoction of oak bark (4 ounces to 1 gallon) for  $\frac{1}{2}$  hour; then dip in a solution of alum (3 ounces to 1 gallon). Rinse and dry.

**Mulberry for Silk.**

Boil the goods for 1 hour in a mordant of alum (4 ounces to 1 gallon), then dip for  $\frac{1}{2}$  hour in a decoction of logwood (5 ounces) and Brazil wood (1 ounce) in 1 gallon of water. If required, add more logwood and Brazil wood, until the color suits.

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**DYES FOR IVORY, BONE, ETC**

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**Black Dye for Ivory.**

Wash the ivory well in alkaline solution, then steep in weak neutral solution of silver nitrate; drain, and expose to light.

**Black for Ivory.**

Ivory is readily and nicely dyed black by first boiling it in a strained logwood decoction, and then immersing it and allowing it to remain for a short period in a solution of iron sulphate or acetate.

**Black for Ivory.**

Water .....	1 gallon
Logwood .....	1 pound
Iron sulphate.....	$\frac{1}{2}$ pound

Mix. Boil the ivory or bone articles in this mixture until the desired shade is obtained.

**Blue for Ivory.**

Steep in a weak solution of indigo sulphate which has been nearly neutralized with salt of tartar, or in a solution of soluble Prussian blue.

**Blue for Bone or Ivory.**

Indigo sulphate.....	$\frac{1}{2}$ ounce
Potash .....	$\frac{1}{4}$ ounce
Water .....	2 quarts

Boil together and steep the goods in the mixture until the color suits.

**Blue for Ivory or Bone.**

Steep the articles in a boiling solution of 1 pound of copper sulphate in 3 quarts of water.

**Blue for Ivory or Bone.**

Immerse the articles for a short time in a weak solution of indigo carmine.

**Green for Ivory.**

Dissolve verdigris in vinegar, and steep therein for a short time in a glass vessel.

**Green for Ivory.**

Dissolve verdigris in diluted acetic acid and steep the articles in the solution.

**Green for Ivory.**

Verdigris .....	2 ounces
Ammonium chloride.....	1 ounce
Water .....	1 gallon

Mix and steep the articles in this solution, using more or less water according to the shade desired. Do not use iron vessels.

**Blue for Ivory or Bone.**

Boil the articles in a strong decoction of logwood (1 pound to 10 pints of water) and afterwards in a solution of blue vitriol (4 ounces to 2 quarts).

**Purple for Ivory.**

Steep in a weak neutral solution of gold chloride, and expose to the light.

**Purple for Ivory.**

Make a decoction of 1 pound of logwood in 1 gallon of water. Boil the articles in this decoction for 6 hours, adding water occasionally. Then add 2 ounces of alum and boil 2 hours longer.

**Red for Ivory.**

Immerse in an infusion of cochineal in ammonia water, having previously soaked it for a short time in water slightly acidulated with nitric acid.

**Red for Ivory.**

Place the goods in a gallon of water to which 1 pint of vinegar and about  $\frac{1}{2}$  ounce of aniline red have been added.

**Red for Ivory or Bone.**

Prepare a tin mordant by adding 2 ounces of nitric acid,  $\frac{1}{4}$  ounce ammonium chloride, tin, in powder,  $\frac{1}{4}$  ounce and water 1 ounce. Steep the ivory in the liquid and allow to dry. Afterward steep it in a boiling decoction of  $\frac{1}{2}$  pound of Brazil wood in 1 gallon of water.

**Red for Bone and Ivory.**

Boil in 1 gallon of water and 1 pound of Brazil wood for 3 hours, then add  $\frac{1}{4}$  pound of alum and boil the bone or ivory in the solution for 1 hour more.

**Red for Bone and Ivory.**

Dissolve cochineal in vinegar (2 to 4 ounces to 1 gallon) and boil the bone or ivory in the solution.

**Yellow for Ivory.**

Dissolve as much orpiment (yellow arsenic) in ammonia water as it will take up; steep the ivory in the solution for some hours, then dry in a warm place.

**Yellow for Ivory.**

Steep the ivory for some hours in a solution of sugar of lead, then, when dry, put it into a solution of potassium chromate.

**Staining Bone.**

To color bone red, boil in vinegar in which cochineal has been macerated for several days, taking care to keep every part of the article covered with the liquid. A fine deep purple red is gotten by immersing in ammoniacal carmine solution for a sufficient length of time. If a very deep color is desired, immerse the article, previously to boiling as above, in a very dilute solution of potassium hydrate for a few moments. Yellow is obtained by first immersing the article for several hours in plain vinegar or an alum solution, and afterwards in a decoction of saffron or barberry, to which a small portion of alum has been added. A green stain is made by dissolving 3 parts verdigris and 1 part ammonia in vinegar. Blue is the result of alternate immersions in the green bath and in one of potassium hydrate. Black is the result of a bath first in a decoction of logwood and afterward in a solution of iron acetate. These processes can be used for staining ivory.

**Bone, to Color.**

The same processes given in the preceding paragraphs for ivory are also applicable for bone.

**To Color Billiard Balls Red.**

Place the balls in a solution of tin chloride for a little while, and then dip them in a hot solution of cochineal or Brazil wood, rinsing well with cold water immediately. If left in the hot solution, they are apt to crack on the surface.

**To Color Billiard Balls.**

Immerse the balls to be colored in diluted nitric acid (1 to 32) for 10 to 20 minutes, then for the same length of time in a solution of stannous chloride (tin chloride, 1 to 200), and finally boil in a solution of carmine (1 to 200), to which a little ammonia water has been added. When dry and cold, rub with a little boiled linseed oil to polish. This gives a crimson color; for blue, use Prussian blue instead of carmine; and for yellow, either turmeric or safflower; for brown, use a mordant of acetates of aluminum and iron, and dye with madder or fustic.

**Easter Dyes.**

To obtain a red color, boil the eggs in a decoction of Brazil wood. In the same manner Persian berries produce a yellow, turmeric a brown, and logwood a deep claret color. By adding potassium chromate to logwood, a black is obtained. To dye blue, make the following solution:

Boiling water.....	2 pints
Iron sulphate (crystals)...	75 grains
Indigo, in powder.....	45 grains
Dry slaked lime.....	2½ drams

Mix together and stir every half hour for three or four hours; cover, and allow to settle for about 12 hours. Decant the clear liquid and dip into it the eggs, already boiled, but still warm. The blue color appears on exposure to the air. Green is produced by the successive applications of blue and yellow. Various shades of purple, violet, etc., are obtained from red and blue. A simple method for imparting variegated colors is to wrap the eggs in pieces of printed muslin, and to boil them thus in water; sometimes very pretty patterns are in that manner printed on the shell of the eggs.

Aniline dyes are largely used, and are desirable because, as a rule, they do not need any substance to set them, this being accomplished by the albuminous portions of the shell. In your purchases, select the following grades, which are said to be free from arsenic: Fuchsine, cryst. N; eosine T; eosine B; violet, red shade; violet, blue shade; blue, pure; blue, peacock shade; Emerald green; Auramin yellow; orange O I; brown T; silver gray.

**Easter Egg Dyes, Commercial.**

<b>Blue.</b>	
Marine blue, B. N.....	60 grains
Citric acid.....	600 grains
Dextrin .....	2 ounces
<b>Mix.</b>	
<b>Brown.</b>	
Vesuvium, S.....	1 ounce
Citric acid.....	1½ ounces
Dextrin .....	1 ounce
<b>Mix.</b>	
<b>Green.</b>	
Brilliant green, G.....	225 grains
Citric acid.....	300 grains
Dextrin .....	2½ ounces
<b>Mix.</b>	



**Red.**

Diamond fuchsine, I..... 60 grains  
Citric acid.....300 grains  
Dextrin .....2½ ounces  
Mix.

**Orange.**

Orange, I. I.....150 grains  
Citric acid.....300 grains  
Dextrin .....2½ ounces  
Mix.

**Violet.**

Methyl violet, 6 B..... 60 grains  
Citric acid.....300 grains  
Dextrin .....2½ ounces  
Mix.

**Yellow.**

Naphthol yellow, S.....255 grains  
Citric acid.....600 grains  
Dextrin .....2½ ounces  
Mix.

Each of the above formulas suffices to make 20 powders, each of which will color at least 5 eggs. The directions should read as follows: Dissolve the dye in porcelain or earthen vessel in 1 pint of boiling water. In the meantime boil 5 eggs for 5 minutes, and transfer to the dye bath, and allow to remain in until sufficiently colored. Then remove and polish them with a small quantity of oil or fat.

**Black Dye for Straw.**

Logwood chips..... 20 ounces  
Bruised galls..... 5 ounces  
Turmeric or fustic..... 10 drams  
Water, sufficient.

Mix and boil the hats for two hours in the solution, with frequent stirring; remove them from the liquid, allow to drain a short time, and steep in a solution of black liquor—crude iron acetate—of 4 or 5° B. Lastly, rinse in an abundance of water, and dry.

**Brown for Straw Hats.**

Boil for an hour in a solution of 1 pound of catechu in 1 gallon of water, then put in a solution of copperas (1 pound to 1 gallon). Rinse and dry.

**Gray Dye for Straw.**

Only very white straws can be dyed this shade. First, steep the hats in a very weak solution of caustic soda, to remove all traces of the sulphur used for bleaching the straw. Then take of:

Alum ..... 20 ounces  
Tartaric acid..... 1 ounce  
Water, sufficient.

Dissolve the alum and the acid, and to the solution add enough ammoniacal cochineal and indigo paste to obtain the desired color. The shade of the gray will incline to the reddish or to the bluish, according to the proportions of the respective coloring materials. A little sulphuric acid may be added if necessary to neutralize the alkalinity of the cochineal. Boil the hats in the mixture for about an hour, and rinse in water slightly acidified with muriatic acid.

**Yellow for Straw Hats.**

Make a solution of 1 ounce of picric acid, ¼ ounce of sulphuric acid and 1 gallon of water. Give the hats a bath in the solution. By increasing the amount of picric acid, a darker shade can be obtained.

**Maroon Dye for Straw.**

Ground saunders ..... 8 ounces  
Ground turmeric ..... 12 ounces  
Bruised galls..... 2 ounces  
Rasped logwood..... 8 ounces  
Water, sufficient.

Boil in a kettle of such size as to allow ample room for stirring the hats without bruising them. After two or three hours, remove them, rinse them, and steep over night in black liquor of 3° B. Rinse in several waters, and dry in the shade.

**Dyes for Feathers.**

Draw the feathers through warm clean soap-suds, and after each immersion through the fingers. When clean, rinse in clean water. Dry by shaking them near a fire. When dry coil with an ivory knife. They are then ready for dyeing.

**Black for Feathers.**

Prepare a bath of logwood (8 ounces), copperas (1 ounce), water, 1 gallon, and immerse the feathers 2 or 3 days.

**Blue for Feathers.**

Prepare as directed in the preceding formula, and dip the feathers afterwards in a solution of indigo.

**Brown for Feathers.**

Use any of the brown dyes for silk or wool.

**Crimson for Feathers.**

Dip the feathers in a mordant of alum (1 ounce to 1 gallon), then in a hot bath of Brazil wood (1 pound to 1 gallon) and afterwards in a weak dye of cudbear (4 ounces to 1 gallon).

**Pink or Rose for Feathers.**

Dip the feathers in a mordant of alum (1 ounce to 1 gallon), then in an infusion of safflower (¼ pound to 1 gallon).

**Red for Feathers.**

Prepare a dye as directed in the formula for crimson given above, varying the quantity of Brazil wood, until the color suits.

**Yellow for Feathers.**

A mordant of alum (1 ounce to 1 gallon) followed by a bath of turmeric (4 ounces to 1 gallon).

**Green for Feathers.**

Soak the feathers in hot water and dip in a solution of verdigris, 4 ounces to 1 pint to 1 gallon, according to the shade desired.

**Felt Hats, to Dye, Stiffen and Bleach.**

Felt hats are dyed by repeated immersion, drawing and dipping in a hot watery solution of logwood, 38 parts; green vitriol, 3 parts; verdigris, 2 parts; repeat the immersions and drawings with exposure to the air 13 or 14 times, or until the color suits, each step in the process lasting from 10 to 15 minutes. Aniline colors may be advantageously used instead of the above. For a stiffening, dissolve borax, 10 parts; potassium carbonate, 3 parts, in hot water; then add shellac, 50 parts, and boil until all is dissolved; apply with a sponge or a brush, or by immersing the hat when it is cold, and dip at once in very dilute sulphuric or acetic acid to neutralize the alkali and fix the shellac. Felt hats can be bleached by the use of sulphurous acid gas.

# PART SIX.

## Technical Formulas, Industrial Processes, Etc.

### CEMENTS, GLUES, MUCILAGE, PASTES, ETC.

#### Acid-proof Cement.

Pitch ..... 1 part  
Rosin ..... 1 part  
Plaster paris, dry..... 1 part  
Mix and melt them together.

#### Acid-proof Cement.

Mix a concentrated solution of sodium silicate with powdered glass to form a paste.

#### Acid-proof Cement.

A mixture of fine China clay and boiled linseed oil in such proportions as to give the desired consistency.

#### Acid-proof Cement.

Quicklime and linseed oil form a cement that will resist steam and acids.

#### Acid-proof Cement.

Ground asbestos and sodium silicate form a cement that will resist heat and acid.

#### Acid-proof Cement.

Asbestos ..... 1 part  
Fine sand..... 1 part  
Waterglass ..... 3 to 4 parts

Mix. This forms a plastic fireproof cement that dries quickly in the air.

#### Davy's Universal Cement.

Is made by melting 4 parts of common pitch with 4 parts gutta-percha in an iron vessel, and mixing well. The mixture must be kept fluid, under water, or in a dry, hard state.

#### Cement, Oil Resisting.

Sixteen pounds of first quality of glue, 1 pound nitric acid, and 1 pound of gum ammoniac. The glue is warmed over a fire until it is well dissolved when the gum ammoniac is added and well mixed. Have the metal surface dry and warm. This cement can be used for fastening gutta-percha, rubber, canvas, leather or similar substances to metal and is not susceptible to the action of oil.

#### Cement Impervious to Carbon Disulphide.

To the best quality of white glue add 10 per cent of molasses.

#### Cements of Gutta-Percha and India Rubber.

The number of rubber cements in use all over the world is something remarkable. Almost all of them have as the base either gutta-percha or India rubber, and some cheap solvent. In making a cement, one should know pretty thoroughly what is to be expected of it. For instance, an ordinary rubber cement will hold on a host of different surfaces and with the best of success, except

where there is continued dampness. For holding to damp walls, or surfaces where there is a constant presence of moisture, there is nothing equal to marine glue, which consists of India rubber, 1 part; asphaltum, 2 parts; coal tar, 12 parts.

The rubber, after having been massed, is dissolved in the undistilled coal tar, and the asphaltum is then added. This glue, as its name indicates, is oftentimes used for mending articles at sea, or patches, for instance, that are to be laid on surfaces that are to be under water, and it has been found to be a most excellent thing. Of glass cements there are a great many, the rubber as a rule being dissolved in some very volatile solvent, and some hard drying gum is added.

#### Gutta-Percha Cement for Leather.

A gutta-percha cement for leather is obtained by mixing the following. It is used hot: Gutta-percha, 100 parts; black pitch or asphaltum, 100 parts; oil of turpentine, 15 parts. An elastic gutta-percha cement is especially useful for attaching the soles of boots and shoes, as on account of its great elasticity it is not liable to break or crack when bent. To make it adhere tightly, the surface of the leather is slightly roughened. It is prepared as follows: By dissolving 10 parts of gutta-percha in 100 parts of benzine. The clear solution from this is then poured into another bottle containing 100 parts of linseed oil varnish, and well shaken together.

#### Cement for Aquarium.

Gutta-percha, in shreds... 4 ounces  
Black pitch..... 8 ounces  
Shellac ..... 2 drams

Mix. Melt in an iron ladle on a sand bath and stir together. Pour out on a wet slab and roll into sticks.

#### Cement for Aquarium.

Litharge ..... 20 parts  
White sand, finest..... 20 parts  
Plaster of paris..... 20 parts  
Manganese borate..... 1 part  
Resin, powdered..... 70 parts  
Boiled linseed oil, sufficient quantity.

Mix the solids and make them into a paste with the oil.

#### Cement for Aquarium.

Take equal parts of flowers of sulphur, powdered ammonium chloride, and iron filings, and mix thoroughly with good boiled linseed oil. Finally, add a sufficient quantity of pure white lead to form a semi-liquid about the consistency of thick molasses.

#### Cement for Aquarium.

Linseed oil..... 3 ounces  
Tar ..... 4 ounces  
Rosin ..... 1 pound

Mix and melt over a gentle fire.

**Cement for Aquarium.**

Litharge .....	10 ounces
Plaster paris.....	10 ounces
Dry white sand.....	10 ounces
Powdered rosin.....	1 ounce
Boiled linseed oil, enough to make a stiff putty.	

Mix when wanted and allow to set for 3 days.

**Cement for Aquarium.**

A mixture of litharge and glycerin forms a fine aquarium cement. It will turn hard as stone in a few hours.

**Cement for Aquarium.**

Venetian red.....	6 ounces
Iron peroxide.....	2 ounces
Boiled linseed oil, enough to make a stiff paste.	

**Cement for Aquarium.**

Litharge .....	3 ounces
Fine white sand.....	3 ounces
Plaster of paris.....	3 ounces
Powdered resin.....	1 ounce
Boiled linseed oil, enough to make a paste.	

**Cement for Barrels and Casks..**

Tallow .....	5 pounds
Wax .....	4 pounds
Lard .....	8 pounds
Sifted wood ashes.....	5 pounds

Mix and melt together. Apply while hot.

**Cement for Leaky Barrels.**

Lard .....	5 pounds
Rock salt, in fine powder.	5 pounds
Wax .....	2 pounds
Paraffin .....	1 pound
Wood ashes.....	4 pounds

Mix and melt together. Apply while warm.

**Cement for Leaky Barrels.**

Yellow wax.....	4 pounds
Tallow .....	2 pounds
Oil of turpentine.....	1 pound
Gum turpentine.....	6 pounds

Mix and melt together. Apply hot.

**Cracks in a Boat.**

Melt equal parts of pitch and gutta-percha in an iron pot; thoroughly mix by stirring. Make up in sticks and melt into the cracks with a warm iron.

**Pitch for Boats.**

Pine tar.....	1 gallon
Rosin .....	3 pounds

Mix and melt together.

**Pitch for Boats.**

Coal tar.....	1 gallon
Rosin .....	3 pounds

Mix and melt together.

**Bottle Cement.**

Shellac, 2 pounds; rosin, 4 pounds; Venice turpentine, 1½ pounds; red lead, 1½ pounds. Fuse the shellac and rosin cautiously in a copper pan over the fire; when melted add the turpentine, and lastly red lead, which should be dry and warm. Pour into molds, or make into sticks by rolling on a marble slab. Care must be taken to have the red lead equally diffused through the melted mass by constant stirring, as owing to its great specific gravity it is apt to sink to the bottom.

**Bottle Cement.**

Rosin, in powder.....	3 parts
Soda, caustic.....	1 part
Water .....	5 parts

Mix together, then incorporate:

Plaster of paris.....	4½ parts
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After about three-quarters of an hour the mixture will become hard. It is very adhesive, not porous, and is but little affected by boiling water. It must be applied to stoppers when fresh.

**Bottle Cement.**

Rosin and beeswax, equal parts; melt them together and add sufficient Venetian red to give a good color, and enough neatsfoot oil to prevent its being brittle when cold.

**Bottle Cement.**

Sealing wax, 1 pound; rosin, 1 pound; beeswax, 8 ounces; melt together. Bottles may be sealed by dipping the corks in this melted mixture. If it froths, add a very small piece of tallow and stir.

**Bottle Cement.**

Rosin, 15 parts; tallow, 4 parts; beeswax, 2 parts; melt and color with red ochre or ivory black.

**Bottle Cement.**

Black pitch, 6 pounds; ivory black and whiting, each 1 pound. Melt the pitch and add the other ingredients, hot and dry.

**Bottle Cement, Maissiat's.**

India rubber is melted either with or without 15 per cent, of beeswax or tallow; quicklime in fine powder is gradually added, and the heat continued until change of odor shows that combination has taken place, and until a proper consistence is obtained. Used as a waterproof and air-tight covering for corks, bungs, etc.

**Bottle Cement.**

Copal varnish made thick with zinc white, red lead, ivory black or any other color and applied like a paint.

**Bottle Cement.**

Melt yellow beeswax with its weight of turpentine, and color with finely powdered Venetian red. When cold it has the hardness of soap, but is easily softened and molded with the fingers, and for sticking things together temporarily it is invaluable.

**Bottle Cement.**

To render corks impervious to air, acids, alkalis and corrosive liquors generally, boil them for some time in melted paraffin. They must be kept under the surface of the melted material, and should be heated and allowed to cool several times, so as to get all the air out of the pores. Corks thus treated cut easily and make very close joints.

**Transparent Capping Fluid for Bottles.**

Dip the heads of the bottles suitably corked; and, if desirable, provided with a tag or label pasted over the cork, into a fluid prepared with the following ingredients:

Colophonium (rosin).....	20 parts
Ether .....	40 parts
Collodion .....	60 parts

Mix and add coloring matter to suit.

The liquid (varnish) dries rapidly and leaves a beautiful transparent coating.



**Cement for Bottles.**

Gelatin and glycerin make a good cement for bottles. Dip the neck of the bottle in the mixture.

**Gelatin Capsules for Bottles.**

Gelatin .....	7 pounds
Glycerin .....	10 ounces
Water .....	3½ pints

Mix and heat over a water bath till dissolved, add any desired color.

**Bottle Caps, Blue.**

Rosin .....	8 pounds
Melt and add:	
Vermilion 1½ ounces, rubbed down with 1 or 2 ounces of cottonseed oil; and 2 ounces zinc white and 8 ounces ultramarine, rubbed down with 10 ounces of cottonseed oil.	

**Bottle Caps, Green.**

Rosin .....	4 pounds
Tallow .....	6½ ounces
Ultramarine .....	2 ounces
Ochre .....	2 ounces
Prepared chalk.....	1 ounce
Rosin oil.....	1 ounce

Prepare as directed in the preceding formula, rubbing down the powders with some of the melted rosin and tallow.

**Bottle Caps, Red.**

Rosin .....	4 pounds
Tallow .....	1 pound
Vermilion .....	6 ounces
Rosin oil.....	3 ounces

Prepare as directed in the preceding formulas.

**Bottle Caps, Yellow.**

Rosin .....	10 pounds
Tallow .....	1 pound
Chrome yellow.....	10 ounces
Prepared chalk.....	2 ounces
Rosin oil.....	5 ounces

Prepare as directed in the preceding formulas.

**Casein Cement.**

A solution of casein in a concentrated aqueous solution of borax makes a very tenacious cement.

**Casein Cement.**

Casein, powdered.....	5 ounces
Quicklime .....	1 ounce
Camphor, powdered.....	¼ ounce

Mix. Make into a cream with water before using.

**Casein Cement.**

Casein, powdered.....	3 ounces
Quicklime .....	½ ounce
Salts of tartar.....	½ ounce

Mix. Make into a paste with water when required.

**Casein Cement for Metals.**

Washed quartz sand.....	5 ounces
Casein .....	4 ounces
Slaked lime.....	5 ounces

Mix. Prepare with water before using.

**Cement for Celluloid Goods.**

Gum shellac .....	1 ounce
Camphor .....	1 ounce
Alcohol .....	4 ounces

Mix. Dissolve and filter.

**Cement for Celluloid Goods.**

Celluloid scraps.....	1 ounce
Alcohol .....	2 ounces

Macerate the scraps, finely divided, in the alcohol, and, when they are dissolved, filter.

**Cement for Celluloid Goods.**

Paint the ends of the broken articles with a mixture of 3 ounces of alcohol and 4 ounces of ether, until they soften, then press them together and bind. Do not touch for 24 hours.

**Cement to Fasten Celluloid to Wood, Tin, etc.**

Shellac .....	2 ounces
Spirit of camphor.....	3 ounces
Alcohol .....	4 ounces

Mix and dissolve.

**To Make Cisterns and Tanks Water Tight.**

Paint thickly on the inside with a mixture of eight parts of melted glue and four parts of linseed oil boiled with litharge. In forty-eight hours it will be so hard that the tank can be filled with water.

**Chinese Blood Cement.**

Slaked lime.....	50 ounces
Beaten bullock's blood.....	37½ ounces
Alum .....	1 ounce

Mix together. Used to make wooden and pasteboard vessels waterproof.

**Cement for Clock Faces.**

Dammar .....	50 ounces
Copal .....	50 ounces
Venice turpentine.....	55 ounces
Zinc white.....	30 ounces
Ultramarine .....	1 ounce

Mix and melt together. Apply hot and polish when cold.

**Cement for Cue Tips.**

Isinglass .....	1 ounce
Distilled water.....	2 ounces
Glycerin .....	2 drams
Glacial acetic acid.....	1 ounce

Dissolve on a water bath and mix.

**Dental Cement.**

Zinc oxide.....	96 grains
Calcined magnesia.....	2 grains
Syrupy phosphoric acid, enough to make a stiff paste.	

Mix when required for use.

**Dental Cement.**

Glass, powdered.....	1 part
Borax, powdered.....	1 part
Silicic acid.....	2 parts
Zinc oxide.....	40 parts

Concentrated syrupy solution of zinc chloride, enough to make a paste.

Mix when needed for use.

**Dental Cement.**

Soften gutta-percha on a warm porcelain slab and knead in gradually zinc oxide to a proper consistency.

**Dental Cement.**

Aluminium filings.....	5 ounces
Prepared chalk.....	½ ounce
Zinc oxide.....	1 ounce
White gutta-percha.....	8 ounces

Mix and melt with a gentle heat.

**Dental Cement (Vienna Cement).**

Powdered asbestos made into a paste with thick mastic varnish.

**Dental Cement (Wirth's Cement).**

Levigated quartz, made into a paste with thick mastic varnish.

**Elastic Cement.**

Caoutchouc (in small pieces), 1 part; chloroform, 3 parts; dissolve.

**Elastic Cement.**

Caoutchouc, 5 parts; chloroform, 3 parts; dissolve, and add gum mastic (powdered), 1 part. Elastic and transparent.

**Elastic Cement.**

Gutta-percha, 1 pound; caoutchouc, 4 ounces; pitch, 2 ounces; shellac, 1 ounce; linseed oil, 2 ounces; melted together. This must be melted before being applied.

**Elastic Cement.**

Gutta-percha, 3 parts; caoutchouc, 1 part (both cut small); carbon disulphide, 8 parts; mix in a close vessel and dissolve by the aid of a water bath. This is to be gently warmed before it is applied.

**An Elastic Cement.**

Mix together and allow to dissolve the following: 4 ounces of carbon disulphide, 1 ounce of fine India rubber; 2 drams of isinglass;  $\frac{1}{2}$  ounce of gutta-percha. This cement is used for cementing leather and rubber, and when to be used the leather is roughened and a thin coat of the cement is applied. It is allowed to completely dry, then the two surfaces to be joined are warmed and then placed together and allowed to dry.

**Elastic Cement.**

White pitch and gutta-percha, equal parts, are mixed over a water bath.

**Elastic Cement.**

Gutta-percha ..... 1 ounce  
Rosin, pure white.....  $\frac{1}{4}$  ounce  
Carbon disulphide..... 8 ounces

Mix and dissolve. Apply with a brush.

**Cement, Electrical.**

Black rosin, 7 pounds; red ochre, 1 pound; plaster of paris,  $\frac{1}{2}$  pound (both well dried and still warm); melted together, and the heat and agitation continued until all frothing ceases and the liquid runs smooth; the vessel is then withdrawn from the fire, and the mixture stirred until cooled sufficiently. Used to cement the plates in galvanic troughs, join chemical vessels, etc.

**Cement for Emery Wheels.**

There are two processes for making this compound. The first is to use a mixture of equal parts of isinglass and glue made into a moderately thick paste by means of hot water. The second is as follows: Coarse emery powder is mixed with about half its weight of pulverized Stourbridge loam, and enough water to make a thick paste; this is pressed into a metallic mold, and, after having thoroughly dried, is baked in a muffle at a temperature considerably above a red-heat, and below the full white-heat. In this case the alumina of the loam serves as a bond, and unites the particles very completely into a solid artificial emery stone, which cuts "greedily", and yet is said to hardly suffer perceptible wear. This, like the first, is not affected by water.

**Cement for Cinematograph Films.**

White hard varnish..... 2 ounces  
Alcohol ..... 2 ounces

Mix and filter through animal charcoal.

**Cement for Films.**

Sandarac ..... 2 ounces  
Venice turpentine.....  $\frac{1}{2}$  ounce  
Oil of turpentine..... 1 ounce  
Alcohol ..... 20 ounces

Mix, dissolve and filter.

**Cement for Non-Inflammable Cinematograph Films.**

Isinglass ..... 50 parts  
Gum ammoniac ..... 4 parts  
Gum mastic..... 2 parts  
Alcohol, 95 per cent..... 10 parts  
Water, a sufficiency.

Soak the isinglass in cold water over night, or until it is thoroughly softened, then drain, and press gently between absorbent cloths. Place the softened material in a flask, and heat on a water bath until it becomes fluid. Dissolve the gums in the alcohol, and add the solution to the isinglass liquid after removing it from the source of heat and cooling to about 160° F. Stir well, or mix by agitation. Before applying the cement, which must be used warm, clean the surface of the films with chloroform or other fat solvents. If this does not succeed, a borax-shellac solution may be used.

**Cement for Cinematograph Films.**

Ether ..... 2 ounces  
Acetone ..... 4 ounces

Take a strip of non-inflammable film about 8 inches long, cut it up into small pieces, and dissolve them in the solution. Said to be a very good cement, for the reason that it works quickly.

**Preserving Cinematograph Films.**

A French patented process for preserving cinematographic filaments directs the application of pyroxyline solution on the image side of the film; e. g., amyl acetate, 100 grams; nitrocellulose, 9 grams; 33 grams of this solution being diluted with alcohol, 67 grams; drying oil, 5 grams, being then added. Or a solution can be made with alcohol, 500; ether, 500; pyroxyline, 2; camphor, 10 grams.

**Cement for Floors.**

Mix 6 parts of plaster of paris with 1 of lime; wet, slake, and lay the floor. Then go over it after it is dry with a solution of copers. This is repeated several times. The surface must be perfectly dry before each application. Finally, after some days' drying, brown with boiled linseed oil and finally varnish with copal varnish. The floor may have to be laid in sections on account of the expansion on setting. The iron oxide turns brown on exposure to the air.

**Cement for Glass.**

Dissolve casein in a cold saturated solution of borax. Paste with this solution strips of bladder, previously softened with water, on the cracks, and dry at a gentle heat. If the vessel is to be heated, coat the bladder on the outside just before it is dry, with a concentrated solution of soda and quicklime, or plaster of paris.

**Cement for Glass.**

Casein dissolved in silicate of sodium or potassium makes a good cement for glass.

**Cement for Glass.**

Mix precipitated chalk (1 ounce) with kaolin (19 ounces). Mix this powder with liquid waterglass to a thin paste. Smear the edges of the broken article with it, press together and allow 12 hours to set.

**Cement for Glass Labels.**

Rosin ..... 1 part  
Yellow wax..... 2 parts  
Mix and melt together at a gentle heat.

**Cement for Glass Labels.**

Beeswax is an excellent material for attaching glass labels either to bottles or to wood surfaces. Melt the wax, warm the label, and also, when practicable, the surface to which it is applied, coat the label with wax, place it on the surface, and press the label gently into place, with sufficient force to expel any great excess of wax. When quite cold this excess is scraped off, and the surface can then be made perfectly clean by rubbing with a rag moistened with turpentine. White wax may be used instead of yellow; while scarcely as tenacious, it is quite enough so to answer, and presents a better appearance when the back of the label happens to be seen. A small proportion of rosin is sometimes added, but the cement is better without it, unless it is exposed to a tropical temperature.

**Cement for Glass Retorts.**

Iron filings.....13¼ pounds  
Cement .....2¼ pounds  
Plaster of paris..... 1 pound  
Ammonium chloride.....2 1-3 ounces  
Powdered sulphur.....1¼ ounces  
Vinegar .....1¼ pints

Mix and stir the mass into a paste with water. The cemented articles must not be exposed to moisture.

**To Fasten Glass to Brass.**

Use a cement made by melting together 5 ounces of rosin and 1 ounce of beeswax, into which stir thoroughly 1 ounce of red ochre or Venetian red. Continue stirring until the mass is cold. It may be used as is sealing wax.

**To Fasten Metal Letters on Glass or Other Polished Surfaces.**

Copal varnish..... 15 parts  
Linseed oil varnish..... 5 parts  
Raw turpentine..... 3 parts  
Oil of turpentine..... 2 parts  
Carpenter's glue, dissolved in water..... 5 parts  
Precipitated chalk..... 10 parts

Mix and melt together at a gentle heat.

**To Cement Metal to Glass or Porcelain.**

Boil together 2 ounces of thick glue solution with 1 ounce of linseed oil varnish, until as perfect a mixture as possible has been effected. The pieces cemented should remain fastened together for two or three days.

**Cement for Glass to Porcelain.**

Sulphur ..... 6 parts  
White Burgundy pitch.... 4 parts  
Shellac ..... 1 part  
Elemi ..... 2 parts  
Mastic ..... 2 parts  
Powdered kaolin, passed through a very fine sieve 6 parts

Melt together. Before applying, the surfaces to be joined must be carefully heated.

**Cement for Glass and Crockery.**

Pumice stone, powdered... 5 ounces  
Oil of turpentine..... 1 ounce  
Shellac ..... 2 ounces  
Dissolve the shellac in the turpentine on a water bath and work in the pumice.

**Cement for Glassware.**

Gelatin ..... 10 ounces  
Acid chromate of lime.... 2 ounces  
Dissolve the gelatin in 2 ounces or more of water on a water bath and the chromate in ½ ounce of water, using in either case as little water as possible. Mix the solutions.

**Cement for Glass.**

Quicklime ..... 4 ounces  
Litharge ..... 6 ounces  
Linseed oil..... 1 ounce  
Mix.

**Cement for Glass and Crockery.**

Burnt lime..... 10 ounces  
Litharge ..... 15 ounces  
Pipeclay ..... 5 ounces  
Linseed oil..... 3 ounces  
Mix.

**Cement for Glass and Porcelain.**

Russian gelatin..... 8 ounces  
Water ..... 4 ounces  
Acetic acid..... 6 ounces

Macerate the gelatin in the water for 4 hours, put on a water bath and add the acetic acid.

**Cement for Glass and Porcelain.**

White lead..... 20 grams  
Pipeclay ..... 12 grams

Mix them with:

Boiled linseed oil..... 10 grams

Heat on a water bath. The articles cemented are slowly dried in a warm place.

**Cement for Porcelain Letters.**

Boiled linseed oil..... 3 ounces  
Litharge ..... 2 ounces  
White lead..... 1 ounce  
Gum copal..... 1 ounce

Mix on a water bath. Free the surface from grease before applying.

**Transparent Cement for Porcelain.**

The glues generally employed are inconvenient, as they cause yellowish stains. The following method gives an absolutely colorless glue: Mix in a hermetically sealed flask 60 grams of chloroform and 75 grams of rubber cut in very small pieces. After the rubber is dissolved, and when the liquid is completely fluid, add 15 grams of mastic. Let the solution remain for 8 hours, until all the mastic is dissolved. The glue so prepared is used in the ordinary manner.

**Cement for Porcelain and China.**

Sulphur ..... 7 ounces  
White pitch..... 5 ounces  
White shellac..... 1 ounce  
Gum mastic..... 2 ounces  
Gum elemi..... 2 ounces  
Powdered glass..... 7 ounces

Melt all together at a gentle heat. This cement must be warmed before using.



**Cement for Glass and Chemical Ware.**

Rosin .....	5 pounds
Wax .....	1 pound
Red ochre .....	1 pound
Plaster of paris.....	1 ounce

Melt with a moderate heat.

**Cement for Chemical Crockery Ware.**

Pitch,	
Rosin,	
Plaster of paris, of each, equal parts.	

Melt together.

**Cement for Porcelain Letters and Glass.**

Quicklime .....	15 ounces
Water .....	20 ounces

Mix and slake.

Caoutchouc .....	50 ounces
Linseed oil varnish.....	50 ounces

Boil together, and pour, little by little, on the lime, stirring. While hot, pass through muslin.

**Cement for Glaziers (Glazier's Solvent).**

Soft soap.....	3 pounds
Strong lye.....	1 pound

Mix and dissolve.

**Glazier's Cement.**

Slaked lime.....	1 pound
Pearlash .....	2 pounds

Make a paste with water.

**Grinder's Cement.**

Pitch .....	5 ounces
Wood ashes.....	1 ounce
Tallow .....	1 ounce

Melt together.

**Grinder's Cement.**

Rosin .....	4 ounces
Beeswax .....	1 ounce

Melt and add 1 ounce of whiting, previously heated red hot and still warm.

**Cement for White Letters.**

Dry white lead,	
Dammar varnish, of each, equal parts.	

Mix. Hollow letters should be filled with the cement.

**Cement for Ivory, etc., (Egg Cement).**

Fresh egg albumen.....	2 parts
Quicklime .....	1 part
Water .....	1 part

Mix.

**Cement for Ivory.**

Isinglass .....	1 ounce
Gelatin .....	2 ounces
Water .....	10 ounces

Soak till soft, then put on a water bath and add zinc oxide ( $\frac{1}{4}$  to 1 ounce), according to the consistency required.

**Cement for Ivory.**

Albumen, fresh.....	1 ounce
Glue water.....	1 ounce

Mix.

**Cement for Ivory, Bone, Etc.**

Linseed oil.....	6 ounces
Turpentine .....	2 ounces
Mastic .....	5 ounces

Dissolve with a gentle heat.

**Cement for Horn, Bone, Etc.**

Glue .....	10 ounces
Alcohol .....	3 ounces
Alum, powdered.....	2 drams

Dissolve the glue in the alcohol on a water bath and add the alum. A little water may be added if too thick.

**Cement for Ivory, Bone, Etc.**

Fresh albumen.....	1 ounce
Water .....	3 ounces
Burnt gypsum.....	3 ounces

Mix to a thin paste.

**Cement for Insulating Tapes.**

Dissolve pure gum rubber in turpentine, and add 5 per cent of raw linseed oil.

**Cement for Insulating Tapes.**

Yellow pitch.....	8 parts
Beeswax .....	2 parts
Tallow .....	1 part

Mix and melt at a gentle heat.

**Cement for Insulating.**

Shellac .....	5 ounces
Rosin .....	2 ounces
Venice turpentine.....	1 ounce
Yellow ochre.....	3 ounces

Mix and melt at a gentle heat.

**Cement for Insulators.**

Sulphur,	
White lead,	
Plaster of paris, of each, equal parts.	

Melt at a gentle heat. Add a little glue to prevent the cement from setting quickly.

**For Cementing Iron.**

Equal parts of sulphur and white lead, with about one-sixth proportion of borax, are thoroughly incorporated to form one homogeneous mass. When the composition is to be applied it is to be wetted with strong sulphuric acid, and a thin layer of it should be placed between the two pieces of iron to be connected, these being at once pressed together. This cement will hold so firmly as to resist the blows of a steam hammer and dry so completely in a few days as to leave no trace of the cement, the work then presenting the appearance of welding.

**Iron Cement to Withstand Heat.**

Sixty-two parts cast iron filings, 32 parts gun metal or copper filings, and 6 parts of a 4 per cent solution of glacial acetic acid, with sufficient water to render the mixture moist.

**Iron and Blood Cement.**

Lime powdered.....	10 ounces
Bullock's blood.....	20 ounces
Iron filings.....	1 ounce

Mix.

**Cement for Knife Handles.**

One pound of rosin and 8 ounces of sulphur are melted together, and either kept in bars or reduced to powder. One part of this powder is mixed with  $\frac{1}{2}$  part of iron filings, fine sand, or brick dust, and the cavity of the handle filled with this mixture. The hot stem of the knife is then inserted into the cavity, and when cold will be found fixed to its place with great tenacity.

**Cement for Knives and Ivory Handles.**

Rosin .....	4 ounces
Beeswax .....	1 ounce
Plaster of paris.....	1 ounce

Mix and melt at a gentle heat. Fill the hole in the handle and press the knife in, removing superfluous cement.

**Cements for Knives and Handles.**

Rosin, in powder..... 1 pound  
 Whiting (heated to red hot  
 and cooled)..... 1 pound  
 Mix and apply as directed in the preceding.

**Cements for Knives and Handles.**

Rosin ..... 4 ounces  
 Beeswax ..... 1 ounce  
 Red hot whiting..... 1 ounce  
 Melt together.

**Cement for Mending Oil Lamps.**

Caustic soda..... 1 dram  
 Rosin ..... 3 drams  
 Water ..... 5 drams  
 Plaster of paris..... 4 drams

Boil the soda, rosin and water together until homogeneous, then add the plaster. Is is then ready for use. It will set in about thirty minutes, is not affected by the oil and but slightly by water.

**Cement for Mineral Oil Lamps.**

Boil 3 parts rosin with 1 part caustic soda and 5 parts of water. The composition is then mixed with half its weight of plaster of paris, and sets firmly in half to three-quarters of an hour. It is very adhesive, and excellent for attaching the brasswork to mineral oil lamps.

**Cement for Preventing Leaks About Chimneys.**

Dry sand, 1 part; ashes, 2 parts; clay, dried and pulverized, 3 parts. All to be pulverized and mixed into a paste with linseed oil. Apply it when soft, and when it becomes hard water will have no effect on it.

**Cement for Leather.**

To 10 parts carbon disulphide and 1 part spirit turpentine add enough gutta-percha to make a tough, thickly-flowing liquid. The surfaces to be joined must be perfectly free from grease, which is accomplished by laying a cloth upon them and applying a hot iron for a time. The coat is applied to both surfaces, and pressure made till the joints are dry.

**Cement for Leather and Cloth.**

An adhesive material for uniting the parts of boots and shoes, and for the seams of articles of clothing, may be made as follows:

Gutta-percha ..... 1 pound  
 India rubber..... 4 ounces  
 Pitch ..... 2 ounces  
 Shellac ..... 1 ounce  
 Linseed oil..... 2 ounces

The ingredients are to be mixed and melted together and used hot.

**Cement for Leather, Rubber, Etc.**

Carbon disulphide..... 8 ounces  
 Gutta-percha ..... ½ ounce  
 Rosin ..... 40 grains

Melt together on a water bath at a gentle heat.

**Leather and Rubber Cement.**

A very adhesive cement, especially adapted for leather driving belts, is made by taking carbon disulphide, 10 parts; oil of turpentine, 1 part; and dissolving in sufficient gutta-percha to form a paste. The manner of using this cement is to remove any grease that may be present in the leather, by placing on the leather a piece of rag and then rubbing it

over with a hot iron. The rag thus absorbs the grease, and the two pieces of leather are then roughened and the cement lightly spread on. They are joined, and subjected till dry to a slight pressure.

**Leather and Rubber Cement.**

A solution of gutta-percha for shoemakers is made by taking pieces of waste gutta-percha, first prepared by soaking in boiling water till soft. It is then cut into small pieces and placed in a vessel and covered with coal tar oil. It is then tightly corked to prevent evaporation, and allowed to stand for 24 hours. It is then melted by standing in hot water till perfectly fluid, and well stirred. Before using, it must be warmed as before by standing in hot water.

**Leather and Rubber Cement.**

Cement for uniting India rubber.—100 parts of finely chopped rubber, 15 parts of rosin, 10 parts of shellac; these are dissolved in carbon disulphide.

**Leather and Rubber Cement.**

Fifteen grains of India rubber, 2 ounces of chloroform, 4 drams of mastic. First mix the India rubber and chloroform together, and when dissolved the mastic is added in powder. It is then allowed to stand by for a week or two before using.

**Cement for Leather, Belting, Etc.**

Soak 2 pounds of best carpenter's glue in 3 pounds of water, dissolve by the aid of heat and keep on heating until the solution has acquired the consistency of syrup. Then add ¾ ounces of Venice turpentine and about 80 minims of liquefied carbolic acid. On cooling, this cement congeals to a gelatinous mass, which is to be cut into thin slices and spread upon tin plates to dry, which requires about 2 days. When used, the cement is melted with the addition of a little vinegar and applied with a brush to the freshly cut and tapered ends of the leather, and the joint pressed between warm iron plates for a quarter of an hour.

**Cement for Leather Driving Bands and Pulleys.**

Soak 100 parts of good glue in cold water for 10 hours, press off the surplus water, and place in a water bath over a moderate fire to melt. To the melted glue add 2 parts of anhydrous glycerin and 3 parts of red potassium chromate. Let the fire be increased until the mixture comes to a boil for a moment. Use at once, and as hot as convenient. The potassium chromate should not be added until just before using. The surfaces of the leather should be freshened with a clean file or rasp before applying the cement, and the latter should be smeared upon both surfaces to be joined. As soon as brought together, the joint should be placed between 2 flat pieces of board, and either heavily weighted or put into a vice and screwed up tightly. The joint will be complete in from 24 to 30 hours.

**Cement for Leather.**

Glue, 4 ounces; water, enough to dissolve at a gentle heat; then add 2 drams of turpentine and 8 ounces of starch paste. Mix while hot.

**Cement for Leather and Rubber.**

Gutta-percha ..... 10 ounces  
 Asphaltum, pure..... 10 ounces  
 Oil of turpentine..... 1½ ounces  
 Mix and melt together. Use hot.

**Cement for Leather and Rubber.**

Gutta-percha .....	10 ounces
Venice turpentine.....	8 ounces
Shellac .....	1 ounce
India rubber.....	$\frac{3}{4}$ ounce
Liquid styrax.....	1 ounce

Mix and melt together.

**Cement for Leather Straps, or to Fix Leather to Wood or Metal.**

Gutta-percha, 20 parts. Dissolve in a mixture of carbon disulphide, 50 parts, oil of turpentine, 10 parts, and add powdered Syrian asphaltum, 20 parts. After standing a few days, the mixture becomes homogeneous. If too thin, it may be evaporated until, when cold, of the consistence of honey. The leather to which this cement is to be applied must be first cleansed from grease with benzine.

**To Cement Leather to Metal.**

Digest 1 part crushed nutgalls with 8 parts distilled water for six hours, and strain; macerate glue with its own weight of water for 24 hours, and dissolve; spread the warm infusion of the galls on the leather and the glue on the roughened metallic surface; apply the prepared surfaces together and dry gently; the leather then adheres so firmly to the metal that it cannot be removed without tearing.

**Cement to Attach Leather to Metal.**

Asphaltum,  
Gutta-percha,

Mix and melt together equal parts and apply hot under pressure.

**Cement to Attach Leather to Metal.**

Wash the metal with hot solution of gelatin and apply the leather, previously steeped in a hot infusion of galls.

**Cement for Linoleum.**

To fasten linoleum to iron stairs use a mixture of glue, isinglass and dextrin, dissolved in water by heat and a small amount of turpentine added. Apply hot and put heavy weights on the linoleum until the cement hardens.

**Cement for Marble.**

Melt together 8 parts of resin and 1 part of wax; when melted, stir in 4 or 5 parts of plaster of paris. The pieces to be joined should be made hot.

**Cement for Marble.**

Procure a small piece of quicklime fresh from a newly-burnt kiln, slake with white of egg, wash the fractured parts quite clean, and apply.

**Cement for Marble.**

Soak plaster of paris in a saturated solution of alum, bake it in an oven, reduce it to powder, mix with water and apply. It sets like granite.

**Cement for Marble.**

Portland cement.....	12 ounces
Slaked lime.....	6 ounces
Fine sand.....	6 ounces
Infusorial earth.....	1 ounce

Mix and make into a paste with sodium silicate.

**Cement for Marble.**

Litharge .....	20 ounces
Burnt lime.....	1 ounce
Linseed oil, to make a paste.	

Mix. To be made freshly before using.

**Cement for Marble.**

Plaster of paris, steeped in a saturated solution of alum, then recalcined and reduced to powder. Mix up with water, or better, glue water, or solution of shellac.

**Cement for Marble Counter Tops.**

Mix finely-sifted plaster of paris in a strong solution of shellac in alcohol. Apply immediately, pressing the edges of the broken pieces together as closely and quickly as possible.

**Cement to Attach Marble Tops to Counters or Commodes.**

Make a cement of fine plaster of paris and carpenter's glue. Put on hot and quickly, as the mixture sets in a short time.

**Cement for Meerschäum.**

Curdle a little skim milk with acetic acid, separate the albumen and dry quickly. When dry, triturate to a very fine powder, add to it one-tenth of its weight of dry quicklime, and to every 100 parts of mixture add 1 of camphor. Triturate well together and keep in a well-corked bottle. When used, it should be made into a paste with water and applied quickly. The joined pieces should rest in a warm place unmoved for 24 hours to allow the cement to set thoroughly. If the parts to be joined are colored, the joint can be made almost invisible by first bringing the cement powder before wetting it to the desired shade.

**Cement for Meerschäum.**

Casein .....	100 parts
Calcined magnesia.....	5 parts
Sodium silicate, syrupy, a sufficient quantity.	

Mix to make a thick paste.

**Cement for Meerschäum and Amber.**

Dissolve isinglass in water and add calomel or finely sifted white clay to form a paste. Apply hot as directed in the preceding formulas.

**Cement for Meerschäum and Amber.**

Melt gum mastic in linseed oil. Apply hot.

**Cement for Meerschäum and Amber.**

Moisten the surfaces with a solution of potash and press together.

**Cement for Amber, Meerschäum, etc.**

Isinglass .....	8 ounces
Galbanum .....	1 ounce
Gum ammoniac, selected..	1 ounce
Alcohol, about.....	4 ounces

Soak the isinglass in the alcohol for 4 hours, put on a water bath, add the gums and dissolve. Add more alcohol if required.

**Cement for Mother of Pearl.**

Isinglass .....	4 drams
Mastic .....	2 drams
Ammonium chloride.....	1 dram
Alcohol .....	$3\frac{1}{2}$ ounces
Water .....	4 ounces

Steep the isinglass in the water for 1 day, add 2 ounces of alcohol, strain, dissolve in it the chloride, and while hot the remainder of the alcohol in which the mastic has been dissolved. Mix.

**To Mend a Broken Mortar.**

Place the mortar in an oven and heat thoroughly; mix some shellac with a little alcohol and warm until melted, and smear



the hot paste on the hot fractured surface, bind up firmly and allow to cool.

#### Cement for Broken Mortars.

Equal parts of gutta-percha and shellac, fused together form a powerful cement. Apply as directed in the preceding formula.

#### Cement for Pestle Handles.

Melt together equal parts of gutta-percha, rosin and shellac. Warm the pestle and pour the melted mixture in the hole. Then press the wooden handle "home," allow to harden under pressure and remove the superfluous cement.

#### Cement for Pestle Handles.

A stiff paste made of litharge and glycerin. A little of this should be poured into the cavity and also applied to the handle, and the latter should be screwed close down, so that all danger of contaminating material from the mortar may be avoided.

#### Cement for Mending Pestles.

Equal quantities of gutta-percha and shellac are melted together and well stirred. This is best done in an iron capsule placed on a sand bath and heated either over a gas furnace or on the top of a stove. It is a combination possessing both hardness and toughness, qualities that make it particularly desirable in mending mortars and pestles. When this cement is used, the articles to be cemented should be warmed to about the melting point of the mixture and retained in proper position until cool, when they are ready for use.

#### Serviceable Mortar for Floors, Halls and Garden Walks.

One bushel unslaked lime, three bushels sharp sand; mix one pound of alum with one pint of linseed oil, and thoroughly mix this with the mortar when using it and use hot. The alum will counteract the action of the frost.

#### To Make Portland Cement Frost Proof.

Portland cement, 1 part; lime, 1 part; sand (clear river), 3 parts; caustic soda, 1 part dissolved in 3 parts of water.

#### Filling for Old Nail Holes.

Take fine sawdust and mix into a thick paste with glue, pound it into the hole, and when dry it will make the wood as good as new.

#### Cement for Paper, Leather, Cloth, etc.

Dissolve 5 parts of borax in 95 parts of water and add casein, to syrupy consistence.

#### Cement for Parchment Paper.

The best cement for pasting parchment paper, according to lithographic authority, is casein glue. It is much better than so-called chrome glue, because the latter produces yellow or brownish spots where it has been employed. Casein glue is a solution of casein, which appears as a clabber when milk is allowed to curdle. The glue is dissolved in a saturated solution of borax. When dried in the form of transparent gelatin it appears as a grayish-white and somewhat brittle matter, which can be easily dissolved in water, and possesses great adhesiveness. When employed for pasting parchment paper a thin paste is prepared, used in the customary manner, and the jointed places afterwards exposed for a little while to a jet of steam.

#### Cement for Hot Water Pipes.

Two parts of ordinary well-dried powdered loam and 1 part of borax are kneaded with sufficient water to a smooth dough, which must at once be applied to the joints. After exposure to heat, the cement adheres even to smooth surfaces so firmly that it can only be removed with a chisel.

#### Cement for Hot Water Pipes.

Mix 430 parts by weight of white lead, 520 of powdered slate, 5 of chopped hemp, and 45 of linseed oil. The two powders and the hemp cut into lengths of about  $\frac{1}{4}$  inch, are mixed intimately, the linseed oil gradually added, and the mass is then kneaded until it has attained a uniform consistency. It is claimed that this preparation keeps better than ordinary red lead cement.

#### Cement for Steam Pipes.

White lead, mixed, 2 parts; red lead, dry, 1 part; grind or otherwise mix them to a consistency of thin putty with linseed oil; applying interposed layers with one or two thicknesses of canvas or gauze wire, as the necessity of the case may be.

#### Cement for Steam Pipes.

If 2 parts litharge are mixed with 1 part dry slaked lime and 1 part fine sand, well rubbed together, and mixed with such a quantity of hot linseed oil varnish as to form a pasty mass, an excellent cement for iron steam pipes is obtained, which soon sets hard. Consequently it must be prepared every time, and applied when still hot.

#### Cement for Hot Pipes (Steam, Water or Air).

Iron borings.....	5 pounds
Ammonium chloride, powdered .....	2 ounces
Sulphur .....	1 ounce
Water, sufficient.	

Mix the ingredients to a thick paste. By omitting the sulphur, the cement sets more slowly but more firmly.

#### Cement for Pipes (Steam, Hot Air or Water).

Asbestos and white lead are made into a putty with linseed oil. This mixture forms a good cement to resist heat and water.

#### Cement for Plaster Casts.

Dissolve small pieces of celluloid in ether. Decant the liquid after a short while. The pasty residue is a cement that will dry rapidly and not dissolve in water if the articles should be exposed to it.

#### Cement for Plaster Casts.

Stir to a thick batter with sodium silicate, 12 parts Portland cement, 6 parts slaked lime, 6 parts fine lead, 1 part infusorial earth. Very excellent for marble and alabaster. The cemented object need not be heated. After 24 hours the fracture is firm, and the place can with difficulty be found.

#### Cement for Plastics, etc.

Mix vinegar and skimmed milk,  $\frac{1}{2}$  pint of each. Drain the curd and mix with the whites of 5 eggs. Beat well and sift in powdered quicklime to form a paste.

#### Cement for Plastics, etc.

Oyster shells, burnt and reduced to fine powder, are mixed with fresh albumen of eggs.

#### Cement for Plastics, etc.

Rice glue, thickened with finely powdered quicklime.

**Cement for Retorts, etc.**

Clay, powdered and sifted 60 parts  
Rye flour..... 30 parts  
Bran ..... 10 parts

Mix them well. When wanted, take a sufficient quantity and mix it with water to a dough to be applied to the retort or flask.

**Cement for Retorts, etc. (Diamantkitt).**

Graphite ..... 10 ounces  
Litharge ..... 3 ounces  
Milk of lime..... 2 ounces  
Slaked lime..... 1 ounce

Intimately mixed with linseed oil to make a firm mass.

**Cement Used for Repairing Holes in Rubber Boots and Shoes.**

(a) Caoutchouc, 10 parts; chloroform, 280 parts. This is simply prepared by allowing the caoutchouc to dissolve in the chloroform.  
(b) Caoutchouc, 10 parts; resin, 4 parts; gum turpentine, 40 parts. For this solution the caoutchouc is shaved into small pieces and melted up with the resin, the turpentine is then added, and all is then dissolved in the oil of turpentine, the two solutions are then mixed together to repair the shoe with this cement. First wash the hole over with it; then a piece of linen dipped in it is placed over it; as soon as the linen adheres to the sole the cement is then applied as thickly as required.

**Cement for Shoes and Boots.**

Gutta-percha ..... 1 ounce  
Benzine ..... 10 ounces  
Dissolve and pour the solution into  
Linseed oil varnish..... 10 ounces  
Stir until a homogeneous mixture is obtained.

**Cement for Shoes and Boots.**

Make two solutions as follows:

(1)  
Caoutchouc ..... 1 ounce  
Chloroform ..... 4 ounces  
Mix and dissolve

(2)  
Caoutchouc ..... 1 ounce  
Rosin .....  $\frac{1}{2}$  ounce  
Turpentine ..... 4 ounces

Mix and dissolve.

Mix both solutions until a homogeneous mixture is produced.

**Cement for Tires (Automobile or Bicycle).**

Melt together 2 parts pitch and 1 part gutta-percha. Use hot.

**Cement for Tires.**

To a melted mixture of one part each of shellac and gutta-percha add, stirring constantly, one-tenth part each of red lead and melted sulphur. Use hot.

**Cement for Tires.**

For cuts and cracks in the tire.—In 10 ounces carbon disulphide dissolve 20 ounces caoutchouc and 10 ounces gutta-percha, then add 5 ounces fish glue. Bind the tire with cord until the cement has well set.

**Tire Cement.**

In a wide-mouthed bottle place one part of powdered shellac and ten parts ammonia water (sp. gr. .883) and allow the mixture to stand three or four weeks. At first gelatinization results, but eventually the mixture becomes syrupy and is said to answer very satisfactorily.

**Tire Cement.**

Melt together by gentle heat two parts of asphalt and one part of gutta-percha. This mixture is to be used hot, the wheels if possible being warmed. It is said to resemble that sold by bicycle dealers.

**Cement for Tires.**

Shellac ..... 2 ounces  
Gutta-percha ..... 2 ounces  
Red lead..... 90 grains  
Sulphur ..... 90 grains

Mix and melt together. Use hot.

**Cement for Punctured Tires.**

Gutta-percha ..... 1 ounce  
Caoutchouc ..... 2 ounces  
Venice turpentine..... 1 ounce  
Carbon disulphide..... 8 ounces

Mix and dissolve.

**Cement for Punctured Tires.**

India rubber..... 15 grains  
Chloroform ..... 2 ounces  
Mastic ..... 4 drams

Mix and dissolve.

**Liquid Glue.**

Glue ..... 100 parts  
Sugar ..... 40 parts  
Gum arabic..... 30 parts

Dissolve in 200 parts of hot water, then add:

Alum ..... 5 parts  
Dissolved in  
Water, hot..... 20 parts

**Liquid Glue.**

Acetic acid..... 4 ounces  
White glue..... 3 ounces  
French gelatin..... 4 drams  
Shellac varnish..... 4 fl. drams  
Distilled water..... 4 ounces

Dissolve the glue in the acid with heat, and the gelatin in water with heat. Mix the two solutions gradually until homogeneous, then add the varnish, and put into bottles.

**Liquid Glue.**

Gelatin ..... 2½ drams  
Glue, Russian..... 2½ drams  
Acetic acid, glacial..... 2 ounces  
Alcohol ..... 2½ ounces  
Alum ..... 20 grains

Put the gelatin, glue and acetic acid over a water bath until liquid, then add the alum and alcohol, stir until thoroughly mixed, then take off and pour into bottles for use.

**Liquid Glue.**

Slaked lime..... 40 parts  
Sugar ..... 60 parts  
Water ..... 180 parts  
Glue ..... 60 parts

Dissolve the lime and sugar in the water heated to 75° C., then introduce the glue, and, after allowing to swell, again apply heat until dissolved.

**Liquid Glue.**

Best carpenter's glue..... 120 parts  
Acetic acid..... 10 parts  
Water ..... 130 parts  
Alum ..... 1 part

Digest in water bath until dissolved, and when cold add:

Alcohol ..... 30 parts  
Mix thoroughly.

**Liquid Glue.**

Glue .....100 parts  
 Water .....600 parts  
 Dissolve by the aid of heat, add when cold  
 Nitric acid..... 16 parts  
 Mix thoroughly.

**Liquid Glue.**

Clear gelatin.....100 parts  
 Cabinet makers' glue.....100 parts  
 Alcohol ..... 25 parts  
 Alum ..... 2 parts  
 Mix with acetic acid (20 per cent) and heat  
 on water bath for six hours.

**Liquid Glue.**

Colla ..... 1 pound  
 Acacia ..... 4 ounces  
 Glycerin ..... 4 ounces  
 White sugar ..... 4 ounces  
 Acid acetic..... 4 ounces  
 Dissolve the glue and acacia in hot water,  
 add the other ingredients and enough hot  
 water to make 1 gallon.

**Liquid Glue.**

Good white or colored  
 gum .....5½ av. ounces  
 Acetic acid.....5½ fl. ounces  
 Carbolic acid..... 5 grains  
 Water ..... 1 pint  
 Soak the glue in 6 ounces of the water for  
 12 hours. Then heat by means of a water  
 bath until the glue is dissolved, and add to  
 the solution the acetic acid and enough water  
 to measure 1 pint.

**Liquid Glue.**

Fill a jar or bottle with small pieces of  
 glue, and cover with acetic acid. Then place  
 in a vessel of hot water for several hours,  
 until all the glue is dissolved.

**Liquid Glue.**

Glue ..... 1 ounce  
 Cider vinegar..... 2 ounces  
 Mix and dissolve with the aid of heat.

**Liquid Glue.**

A solution of 8 ounces of glue in ½ pint of  
 water is made. To this add 2½ ounces strong  
 nitric acid, stirring all the while. Efferves-  
 cence will take place with the evolution  
 of orange nitrous fumes. When all the acid  
 has been added, the liquid is allowed to cool.  
 Kept in a well-stoppered bottle, it will re-  
 main permanently liquid.

**Liquid Glue.**

One part of phosphoric acid, sp. gr. 1.120,  
 diluted with 2 parts of water, is nearly neu-  
 tralized with ammonium carbonate, 1 part  
 of water added, and then in a porcelain  
 vessel sufficient glue is dissolved in the  
 liquid to obtain a syrupy consistence. It  
 must be kept in well-closed bottles. The ad-  
 dition of glycerin or sugar will cause the  
 glue to gelatinize. The addition of calcium  
 chloride to a solution of glue is recommended  
 to prevent it from cracking by heat or ex-  
 treme dryness. Thus prepared it can be used  
 upon glass and metallic surfaces.

**Liquid Glue for Bookbinders' Use.**

For 50 pounds of the best glue (dry), take  
 9 pounds glycerin. Soak the glue for 10  
 minutes and heat to solution, and add the  
 glycerin. If too thick, add water. Color  
 with aniline dissolved in alcohol.

**Liquid Glue.**

White glue..... 4 ounces  
 Lead carbonate..... 1 ounce  
 Rain water..... 8 ounces  
 Alcohol ..... 1 ounce

Dissolve the glue in the water on a water  
 bath, then mix in the lead carbonate and  
 alcohol. Continue the heat for a few minutes.

**Liquid Glue.**

Best glue..... 1 ounce  
 Formaldehyde solution... ¼ ounce  
 Acetic acid..... ¼ ounce  
 Glycerin ..... ½ ounce  
 Water ..... 10 ounces

Mix and dissolve the glue in the water  
 on a water bath. Then mix in the other in-  
 gredients.

**Liquid Glue.**

Borax ..... 1 ounce  
 Water ..... 2 ounces  
 Solution of potassa..... ½ dram  
 Solution of glue (1:4).....1½ pints

Dissolve the borax in the water, add the  
 potassa and the hot solution of glue.

**Russian Liquid Glue.**

Soften 10 ounces of Russian glue in 10  
 ounces of warm water, add slowly ½ ounce  
 of nitric acid and ½ ounce of lead sulphate.

**Liquid Fish Glue.**

Fish glue..... 5 ounces  
 Acetic acid..... 6 ounces  
 Gelatin ..... 1 ounce  
 Water ..... 6 ounces  
 Shellac varnish..... 1 ounce

Dissolve the glue and gelatin in the water  
 and acetic acid on a water bath, and then  
 gradually work in the varnish.

**Mouth Glue.**

Dissolve 100 parts of white gelatin and 50  
 parts of crystallized sugar in 150 parts dis-  
 tilled water by aid of the water bath and  
 continue the operation until the product  
 measures 200 parts, when it can be formed  
 into sticks.

**Good Mouth Glue.**

Pieces of ordinary glue are soaked for two  
 days. The water is then poured off and the  
 glue melted over a moderate fire; to 1 pound  
 of glue add ½ pound of white sugar, mix  
 thoroughly and then pour the mass into suit-  
 able molds and allow it to stand quietly for  
 a few days. In using the glue it is mois-  
 tened with the tongue.

**Good Mouth Glue.**

Isinglass ..... 1 part  
 Parchment shavings..... ¾ part  
 Rock candy..... ¾ part

Soak for two or three days. Then boil  
 the whole in an earthen pot, stirring con-  
 stantly to prevent the mass from burning.  
 When it is boiled down to about one-half the  
 quantity, strain the fluid through a coarse  
 cloth, and when about half cold pour a thin  
 layer of it upon a stone slab.

**Chromium Glue.**

White glue..... 10 ounces  
 Water ..... 30 ounces  
 Potassium dichromate.... 1 ounce

Dissolve the glue and dichromate each in  
 part of the water. Mix both solutions and  
 allow to congeal.



**Waterproof Glue for Wooden Utensils.**

Thick solution of glue.... 10 parts  
 Linseed oil varnish..... 5 parts  
 Litharge ..... 1 part

Mix, boil for 10 minutes and use the compound while hot.

**Ether Glue.**

Dissolve glue in nitric ether and add a few small pieces of India rubber.

**Fireproof Glue.**

Quicklime ..... 2 ounces  
 Linseed oil..... 4 ounces

Boil to a thick mixture. It becomes very hard, but can be softened by heat and used as glue.

**Isinglass Glue.**

Dissolve isinglass in water and strain. Then add a little alcohol and evaporate to the desired consistency.

**Marine Glue.**

India rubber..... 1 ounce  
 Benzine, sufficient.  
 Shellac ..... 2 ounces

Mix and dissolve on a water bath. A good waterproof glue.

**Tungstic Glue.**

Mix a thick solution of glue with sodium tungstate and hydrochloric acid.

**White Glue.**

Solution of glue..... 1 pint  
 Oxalic acid.....  $\frac{1}{4}$  drams  
 Zinc oxide.....  $\frac{1}{4}$  drams

Powder the acid and oxide and rub the mixture with some of the glue. Then incorporate it in the remainder of the glue.

**Zinc Glue.**

Zinc oxide..... 5 parts  
 Gelatin ..... 5 parts  
 Water ..... 6 parts  
 Glycerin ..... 8 parts

Dissolve the gelatin in the water and glycerin on a water bath and work in the zinc oxide.

**To Bleach Glue.**

A glue can be bleached by adding oxalic acid and zinc oxide, in the proportion of 1 per cent of the glue. The glue should first be made into a pulp with water and heat, and the chemicals added while the mass is hot. The same process may be used for bleaching blood albumen, but the degree of heat should not be above 122° F., or the albumen will coagulate.

**Mucilage of Acacia.**

Acacia ..... 34 ounces  
 Water ..... 66 ounces  
 Hydronaphthol ..... 30 grains

Place the acacia and hydronaphthol in a cork bag or one extemporized with cheese cloth and suspend the same in a crock containing the water.

**Mucilage.**

Allow 1 part of white glue (or gelatin) and 2 parts of gum arabic to swell in 10 parts of water; then dissolve, after adding one-fourth part white sugar, at a gentle heat, and strain if necessary. To prevent from spoiling add a few drops of carbolic acid or oil of cloves.

**Mucilage.**

One part of gum arabic is dissolved in 2 parts of water, 0.1 part each of pure calcium carbonate and coarsely powdered animal charcoal added, and the whole allowed to stand 24 hours. The solution is then diluted with 10 parts of water, filtered, and finally evaporated to the proper weight (3 parts).

**Mucilage.**

To 250 grams of a concentrated solution of acacia (2 parts in 5 parts water) add a solution of 2 grams of crystallized aluminum sulphate in 29 grams of water. Alum in place of the salt mentioned may be used, but gives less satisfaction. For decolorizing mucilage, freshly precipitated aluminum hydrate is recommended. The ordinary mucilages, particularly if very concentrated, often fail in their object by merely wetting without causing to adhere, pasteboard to pasteboard, wood to wood, or a metal surface, and without cementing glass, china, pottery, etc. The addition of aluminum sulphate is recommended as sufficient to impart to a concentrated mucilage the desired adhesiveness.

**Mucilage.**

Gum arabic..... 8 ounces  
 Lime water..... 16 ounces

Mix and dissolve. This mucilage will keep better than the one made with plain water.

**Mucilage.**

Gum acacia..... 1 pound  
 Water ..... 2 pints  
 Sulphuric acid.....  $\frac{1}{2}$  dram

Dissolve the gum in the water, add the acid, let stand 24 hours and strain. This mucilage is said not to get mouldy.

**Mucilage, Permanent.**

Prepare like the preceding formula, but moisten the gum with alcohol before dissolving.

**Mucilage of Acacia, to Preserve.**

Use the best gum acacia and boiled distilled water. After effecting solution add a few drops of oil of cloves or sulphuric acid, or alcohol.

**Mucilage of Acacia.**

Gum arabic..... 10 ounces  
 Water ..... 1 pint  
 Glycerin ..... 1 ounce  
 Dilute acetic acid..... 2 ounces  
 Aluminum sulphate.....  $\frac{1}{2}$  ounce

Dissolve the gum in the water, let stand 2 hours, then add the other ingredients. Mix, after 4 hours strain.

A very strong durable mucilage.

**Mucilage of Acacia (Household).**

Gum arabic..... 3 ounces  
 White sugar..... 1 ounce  
 Boiling water..... 5 ounces  
 Vinegar ..... 1 ounce

Mix the gum and sugar and stir in the boiling water. When cold add the vinegar.

**Dextrin Mucilage.**

White dextrin..... 4 av. ounces  
 Gum arabic..... 2 av. ounces  
 Sugar (granulated)..... 1 av. ounce  
 Water ..... 12 fl. ounces

Dissolve the gum arabic and sugar in 6 fluid ounces of the water. Dissolve the dextrin in 6 fluid ounces of hot water by the aid of heat, and mix the solutions when cool.

This makes a white, not a clear, mucilage, very adhesive, and much better than gum arabic for paper labels.

#### Dextrin Mucilage.

Dextrin .....	10 drams
Glucose .....	$\frac{1}{4}$ dram
In which is dissolved a solution of	
Alum .....	15 grains
Glycerin .....	1 dram
Water, enough to make...	2 ounces
Mix.	

#### Dextrin Mucilage.

Dextrin, white.....	6 ounces
Acetic acid, dilute.....	1 ounce
Oil of cloves.....	10 drops
Glycerin .....	1 ounce
Water, enough to make...	16 ounces

Mix the dextrin thoroughly with 6 ounces of cold water, add 8 ounces of boiling water, boil five minutes, stirring constantly; add hot water sufficient to make 14 ounces. When it is cold, add the acetic acid, oil of cloves and glycerin. The oil must be thoroughly mixed with the remainder.

#### Dextrin Mucilage.

Dextrin .....	3 ounces
Acetic acid.....	1 ounce
Water .....	5 ounces
Dissolve by aid of heat. When cold, add:	
Methylated spirit.....	1 ounce
Mix.	

#### Dextrin Mucilage.

Dextrin .....	2 ounces
Powdered alum.....	1 dram
White sugar.....	$\frac{1}{2}$ ounce
Water .....	4 ounces
Liquefied carbolic acid...	2 drams

Dissolve all of the ingredients except the carbolic acid, in the water previously raised to the boiling point. Continue the boiling until dissolved; when cold, add the carbolic acid.

#### Dextrin Mucilage.

Dextrin .....	4 ounces
Water .....	6 ounces
Glucose .....	2 drams
Aluminum sulphate.....	1 dram

Mix the dextrin with 4 ounces of water, then add the remainder of the water, then the glucose and aluminum sulphate. Heat to the boiling point, but do not boil.

#### Dextrin Mucilage.

Dextrin .....	1 pound
Acetic acid.....	4 ounces
Alcohol .....	4 ounces
Water, enough to make...	2 pints

Dissolve the dextrin in 1 pint of boiling water, strain, add the acid, and when nearly cold, add the alcohol.

#### Dextrin Mucilage.

Dextrin .....	1 pound
Alum .....	1 ounce
Sugar .....	1 pound
Water .....	2 pints
Carbolic acid.....	$\frac{1}{2}$ ounce

Mix and heat to boiling point.

#### Elastic Mucilage.

To any mucilage, made of gum acacia, add a solution of soft soap in equal parts of alcohol and glycerin. About 10 per cent of this soap solution will make the mucilage elastic.

#### Flexible Mucilage.

To 20 parts of alcohol add 1 part of salicylic acid, 3 parts of soft soap and 3 of glycerin. Shake well and then add a mucilage made from 93 parts of gum acacia and 180 parts of water. This keeps well and is thoroughly elastic.

#### Linseed Mucilage.

Linseed .....	1 ounce
Warm water.....	6 ounces
Digest for 6 hours and strain.	

#### Linseed Mucilage.

Linseed .....	1 ounce
Dextrin .....	2 ounces
Sugar .....	2 ounces
Hot water.....	1 pint
Oil of cloves.....	1 dram

Digest the linseed in the hot water for 6 hours, strain, add the dextrin and sugar, stirring constantly, heat to boiling point; when nearly cold, add the oil and stir well.

#### Postage Stamp Mucilage.

Dissolve 1 pound of dextrin in a pint of boiling water, strain through flannel and add 2 ounces of acetic acid. When nearly cold add 4 ounces of alcohol, stir constantly, and finally add enough warm water to make 1 quart.

#### Standard Adhesive Mucilage.

Gum arabic, in fine, powder .....	8 ounces
Glucose .....	2 pounds
Boiling water.....	20 fl. ounces
Acetic acid.....	1 ounce

Dissolve the gum arabic in the water, then add the glucose, and bring the whole to a good boil, stirring well. Remove from the fire, and, lastly, add the acetic acid.

#### Stick Mucilage.

Dissolve gum arabic in hot water to form a syrupy liquid, add a little oil of cloves, and thicken with powdered gum dextrin; mold and dry slowly.

#### Stick Mucilage.

Glue, 5 ounces; sugar, 1 ounce; dissolved in water, boiled down, poured into molds and dried.

#### Stick Mucilage.

Isinglass and parchment glue, each 1 ounce; sugar candy and tragacanth, of each 2 drams; add to them 1 ounce of water; boil the whole till the mixture appears, when cold, of the consistence of glue. Then form it into small rolls for use.

#### Stick Mucilage.

Boil 1 pound best glue, strain it very clear; boil also 4 grains of isinglass; put it into a double glue pot, with  $\frac{1}{2}$  pound of fine brown sugar and boil it pretty thick, then pour it into plates or molds. When cold, cut and dry them for the pocket. It immediately dissolves in warm water and fastens the paper without the process of dampening, or it may be used by softening it in the mouth and applying it to the paper.

#### Stick Mucilage.

White gelatin.....	10 ounces
Sugar .....	5 ounces
Water, distilled.....	15 ounces

Put on water bath, dissolve, and evaporate to 20 ounces, when the mixture can be formed into sticks.

**Tragacanth Mucilage.**

Tragacanth, powdered.....	1 ounce
Glycerin .....	4 ounces
Boiling water.....	16 ounces

Mix the tragacanth with the glycerin in a mortar and stir in the boiling water. This makes a very thick mucilage which can be thinned by increasing the boiling water.

**Gum Arabic Substitute.**

Lime, slaked.....	3 ounces
Sugar, granulated.....	12 ounces
Water .....	36 ounces
Glue, enough.	

Dissolve the sugar in the water, then boil and add the lime. In a few days the lime sinks to the bottom, leaving a clear, thick mucilage; fully as adhesive, as if made with gum. One or two ounces of good glue, added to 15 ounces of the solution, keep it fluid.

**Gum Arabic Substitute.**

Wheat bran is the substance treated as follows: By first washing with water, all adhering starch is removed from the bran, whereupon it is boiled with an ammoniated salt solution in order to remove the proteins. After expressing and lixiviating with clear water, there remains a mass of cellular tissue containing metarabin. This cellular tissue is boiled under pressure, with milk of lime or a 1 per cent. solution of potassa, then expressed, the liquid neutralized and finally concentrated by evaporation. The resulting mucilage is claimed to possess adhesive properties.

**Mucilage to Fasten Paper to Wood.**

Paper may be stuck on wood by means of this solution: Gum arabic, half ounce; powdered tragacanth, half ounce; water, one and one-half ounces; and acetic acid, twenty drops. It will cause labels to adhere very firmly without staining them, unless the paper is of an unusually bad quality.

**Mucilage, to Fasten Paper to Metal.**

Paper pasted, gummed, or glued on to metal, especially if it has a bright surface, usually comes off on the slightest provocation, leaving the adhesive material on the back of the paper, with a surface bright and slippery as ice. It is, however, said to be now overcome by dipping the metal into a strong and hot solution of washing soda, afterward scrubbing perfectly dry with a clean rag. Onion juice is then applied to the surface of the metal, and the label pasted and fixed in the ordinary way. It is said to be almost impossible to separate paper and metal thus joined.

**Mucilage, to Fasten Paper to Metal.**

To make ordinary mucilage adhesive to metal surfaces, the addition of some (about 5 per cent.) aluminium sulphate is recommended.

**Dichromated paste.**

(To attach paper to glass and for use in damp climates.)

Flour .....	2 teaspoonfuls
Water .....	4 ounces
Potassium dichromate.....	5 grains

The flour must be rubbed to a smooth batter with the water, then placed in a saucepan over a fire and kept stirred till it boils. Add the dichromate slowly, stirring all the time. Then stand to cool. This paste must be kept in the dark and used as soon as possible. Soak the paper in it and attach to the glass, and then place in direct sunlight for a day. This sets up a chemical change in the dichromate and renders the paste insoluble.

**Rice Paste.**

May be prepared by mixing flour and water, which mixture is then heated to a boiling point until the required consistency is obtained. This paste possesses great adhesive power, and is recommended where it is desired that the object to be pasted on or together should undergo no change in color or shading.

**Stickfast Paste.**

Wheat flour.....	1 ounce
Tragacanth, powdered.....	4 drams
Gum arabic, powdered.....	4 drams
Salicylic acid.....	30 grains
Oil of wintergreen.....	3 drops
Water .....	12 fl. ounces

Mix the powders and gradually add the water, then bring to the boiling point; allow to simmer for twenty minutes, stirring constantly. When cold add the oil.

**Paste for General Use.**

Gum arabic.....	10 ounces
Starch .....	7 ounces
White sugar.....	2 ounces
Camphor, powdered.....	3 drams

Dissolve the gum in 20 ounces of water and rub the starch with 10 ounces of water.

Mix the solution, add the sugar previously rubbed up with the camphor, and heat until a paste is formed.

**Paste for General Use.**

Starch .....	2 ounces
Sugar .....	1 ounce
Gum arabic.....	2 drams

Dissolve each substance in a little water, mix the solutions and bring to a boil.

**Paste for General Use.**

Wheat flour.....	10 ounces
Rice flour.....	8 ounces
Tragacanth .....	2 ounces

Make a paste of the tragacanth with water, and a paste of the mixed flours with water, by the aid of heat, then mix both pastes.

**Paste for General Use.**

Wheat flour.....	8 ounces
Alum .....	$\frac{1}{8}$ ounce
Borax .....	$\frac{1}{8}$ ounce
Boric acid.....	$\frac{1}{2}$ dram
Oil of sassafras.....	$\frac{1}{2}$ dram
Water .....	3 pints

Mix the flour, alum, borax and the acid intimately with the water, heat until starch forms, add the oil when nearly cool. Stir well.

**Adhesive Paste.**

Powdered tragacanth.....	2 ounces
Alcohol .....	2 ounces
Boiling water.....	16 ounces
Rye flour.....	6 ounces
Dextrin .....	1 ounce
Water .....	2 pints
Glycerin .....	1 ounce
Formalin .....	1 dram

Mix the tragacanth with the alcohol, add slowly with stirring the boiling water. Mix the flour and dextrin with 6 ounces of water, add both mixtures, and the remainder of the water. Bring to the boiling point until starchy, add the glycerin and finally the formalin.

**Paste for Store Use.**

Flour .....	4 ounces
Powdered gum arabic.....	1 ounce
Glycerin .....	1 fl. ounce
Salicylic acid.....	60 grains
Water .....	2 pints



Mix all in a mortar, pass through a sieve, boil for a few moments, stirring to prevent burning. Avoid contact with iron.

#### Adhesive Paste (Remington's).

Wheat flour.....	4 ounces
Nitric acid.....	1 dram
Oil of cloves.....	5 drops
Boric acid.....	10 grains
Water .....	16 ounces

Mix the flour and boric acid with the water, strain, add the nitric acid, heat with constant stirring until thick; when nearly cold add the oil of cloves. A good serviceable paste for general store use.

#### Adhesive Paste.

Flour .....	2 ounces
Starch, powdered.....	10 ounces
Salicylic acid.....	$\frac{1}{2}$ ounce
Oil of cloves.....	1 dram
Water .....	2 pints

Prepare as directed in the preceding formula.

#### Adhesive Paste.

Wheat flour.....	8 ounces
Carbolic acid.....	$\frac{1}{2}$ dram
Oil of cloves.....	$\frac{1}{2}$ dram
Glycerin .....	1 ounce
Water .....	2 pints

Proceed as in the preceding formulas.

#### Label Paste.

Dextrin .....	8 parts
Acetic acid.....	2 parts
Alcohol .....	2 parts
Water .....	10 parts

Mix well the dextrin with the acid and water, then add the alcohol.

#### Label Paste.

Gum arabic.....	4 ounces
Tragacanth .....	1 ounce
Water .....	20 ounces
Thymol .....	$\frac{1}{2}$ dram
Glycerin .....	4 ounces

Dissolve the gums in the water, strain through cloth, then add the thymol, previously mixed with the glycerin, and enough water to make the whole weigh 40 ounces.

#### Label Paste.

Rice starch.....	4 ounces
Gum arabic, powdered....	1 ounce
Water .....	8 ounces

Mix well in a mortar, strain through cloth, and add 1 pint boiling water. Heat the mixture until it acquires a proper consistency, and add, after cooling,

Glycerin .....	30 grams
Oil of cloves.....	20 drops

Mix well.

#### Label Paste.

Rice starch.....	4 ounces
Water .....	20 ounces
Nitric acid.....	1 dram
Carbolic acid.....	10 drops
Glycerin .....	1 ounce
Oil of cloves.....	10 drops

Mix the starch with the water, strain, add the nitric acid, heat to a proper consistency, cool, and add the other ingredients.

#### Label Paste.

Wheat flour.....	5 troy ounces
Nitric acid.....	1 fl. dram
Oil of cloves.....	5 minims
Boric acid.....	10 grains
Water .....	$1\frac{1}{2}$ pints

Mix the flour thoroughly with the boric acid and water and strain through a sieve to avoid lumps, add the nitric acid and heat with constant stirring until the mixture has thickened. When nearly cold add the oil of cloves and stir. When required for putting labels on tin add 10 per cent. of glycerin to the paste.

#### Paste for Bottle Labels.

Rye flour.....	4 ounces
Powdered alum.....	$\frac{1}{2}$ ounce
Rub to a smooth paste with 8 ounces of cold water, strain through a cheese cloth and pour into 1 pint of boiling water. Continue heat until thickened to suit. When nearly cold, add:	

Glycerin .....	1 ounce
Oil of cloves.....	30 drops

This is suitable for tin or wood boxes, or bottles, and keeps sweet for a long time.

#### Paste for Bottle Labels.

Tragacanth .....	1 ounce
Gum arabic.....	4 ounces

#### Dissolve in

Water .....	1 pint
Strain, and add	
Thymol .....	14 grains

#### Suspended in

Glycerin .....	4 ounces
----------------	----------

#### Then add

Water, enough to make....	2 pints
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This makes a thin paste, suitable for labeling bottles, tin or wooden boxes, or for any other purpose for which paste is usually employed. It makes a good excipient for pill masses, and does nicely for emulsions, the very small percentage of thymol not being of any consequence. This paste will keep sweet indefinitely, the thymol preventing fermentation. It will, on standing, separate, but a single shake will mix it sufficiently for use.

#### Paste and Mucilage, to Preserve.

The following antiseptics are the best for preserving pastes and mucilages:

Salicylic acid.....	$\frac{1}{2}$ per cent.
Boric acid.....	1 per cent
Thymol .....	$\frac{1}{2}$ per cent
Oil of cloves.....	$\frac{1}{2}$ per cent

#### Paste for Labels on Tin.

Mucilage of acacia.....	95 parts
Glycerin .....	5 parts

Mix. The surface of the tin must be cleaned if necessary.

#### Paste for Labels on Tin.

Prepare a solution by boiling 2 ounces of shellac and  $\frac{1}{2}$  ounce of borax in 8 ounces of water. The space on the tin to be covered with the label is given one coat of this solution, and after drying the label is applied with ordinary mucilage.

#### Paste for Labels on Tin.

Brush over the surface of the tin with strong tannin solution, allow to dry, and apply the label, previously well gummed.

#### Paste for Labels on Tin.

Brush the surface of the tin with a thin streak of butter of antimony or with oleate of mercury; clean well and apply the label.

#### Paste for Labels on Tin.

Flour .....	16 ounces
Boracic acid.....	80 grains
Water .....	4 pints
Nitric acid.....	4 fl. drams
Glycerin .....	3 fl. ounces
Oil of cloves.....	a sufficiency

To the flour and boric acid add the water, which should be cold, slowly, stirring to make a smooth paste. Successively add the glycerin and nitric acid and bring to a boil. If necessary, the paste may be strained through a coarse sieve while it is thin. This will add to the appearance and do away with small lumps. Lastly, add the oil of cloves as a preservative.

#### Paste for Labels on Tin.

Clean the surface by rubbing with solution of caustic soda, and then thoroughly wipe before applying the label. This is employed on the principle of attributing the difficulty to the presence of a thin layer of grease, as is also the case with the addition of ammonia water to the paste.

#### Paste for Labels on Tin.

Add Venice turpentine to good starch paste.

#### Paste for Labels on Tin.

Shellac, 2 parts; borax, 1 part; water, 16 parts; are boiled together until the shellac dissolves.

#### Paste for Labels on Tin.

Add 1 ounce of dammar varnish to 4 ounces of tragacanth paste.

#### Paste for Labels on Tin.

Balsam of fir, 1 part; turpentine, 3 parts. Dissolve. This is applicable only with good qualities of well-sized labels.

#### Paste for Labels on Tin.

Roughen the surface with emery paper, then apply the label—preferably with waterglass as an adhesive agent.

#### Paste for Labels on Tin.

Make gum tragacanth into a mucilage of the desired consistency with hot water, and then add to it 10 per cent of flour.

#### Paste for Labels on Tin.

Boil 2 pounds of flour with 1 quart of water to make a stiff paste; add 2 ounces of tartaric acid and 1 pint of molasses. Boil together until stiff, and add 10 drops of carbolic acid.

#### Paste for Labels on Tin.

Starch .....	1 pound
Water .....	10 ounces
Solution of tin chloride....	4 ounces
Glycerin .....	1 ounce
Oil of sassafras.....	30 drops

Mix the tin chloride solution with the water and glycerin and add to the starch; boil the whole until a clear paste is formed. Then allow to cool, and when nearly cold add the oil.

#### Paste for Labels on Tin.

Mix 1 pound of the very best rye flour with from 6 to 8 ounces of dark brown sugar and boiling water until the mixture is of a proper consistency. If the labels are light in color, the lightest variety of brown sugar should be employed. This paste sours very quickly and should be made every day, but it is very effective, and is especially desirable where a large number of labels are to be put on.

#### Paste for Labels on Tin.

For fastening labels to tin surfaces where they are exposed to moisture, there is nothing superior to egg albumen. The albumen is mixed with equal parts of water, or two parts of the latter may be used to one of the

former, and the mixture used as ordinary mucilage. When it is dry, however, a hot iron is carried quickly over the surface of the label, by which means the albumen is altered so as to become insoluble in water.

#### Paste for Labels on Tin.

Tragacanth mucilage.....	10 ounces
Honey .....	10 ounces
Wheat flour.....	1 ounce

Mix. Moisten the label before applying the paste.

#### Paste for Labels on Tin.

Mix solution of sodium silicate with a thin acacia mucilage.

#### Damp Proof Cement.

Gold size, 1 ounce; German glue, 3 ounces; distilled water, 3 ounces. The glue is dissolved in water, and the spirit added, the solution being then well shaken; the gold size is added last, and the whole agitated. Recommended for cementing wood, china, glass, etc.

#### Artists' Paste.

Boil white paper in water for 5 hours, pour off the water and pound the pulp in a mortar; pass through a sieve and mix with a thin gum mucilage or glue.

#### Bill Posters' Paste.

Wheat flour, 1 pound; water, 8 ounces; alum,  $\frac{1}{2}$  ounce; oil of cloves, 5 drops. Mix, and make a paste.

#### Bill Posters' Paste.

Wheat flour.....	1 $\frac{1}{2}$ pounds
Alum .....	$\frac{1}{2}$ pound
Boiling water.....	1 gallon

Mix and boil till thick.

#### Envelope Paste.

Gum arabic.....	1 ounce
Starch .....	1 ounce
Sugar .....	4 ounces

Boiling water, sufficient to make a paste.

#### Envelope Paste.

Isinglass .....	1 ounce
Acetic acid.....	1 ounce
Water .....	8 ounces

Dissolve the isinglass in the water and acid on a water bath.

#### Gummed Paper Paste.

Gum arabic.....	1 pound
Cold water.....	3 pints
Honey .....	1 $\frac{1}{2}$ ounces
Glycerin .....	1 $\frac{1}{2}$ ounces

Mix and dissolve without heat.

#### Adhesive Office Paste.

Take 4 ounces of common gelatin in small pieces and steep it in 16 ounces of water until it becomes soft, then by the aid of the heat of a water bath dissolve it, and while still hot pour it into a mixture of 2 pounds of good flour paste and a pint of water. Heat the whole to boiling, and when thickened remove from the fire; while cooling add 6 drams of sodium silicate and stir into the mixture with wooden spatula. This preparation will keep good for an indefinite period, and is very adhesive. The addition of 2 drams of oil of cloves is an improvement.

**Japanese Paste.**

Rub powdered rice with a little cold water and gradually add boiling water, until the proper consistency is reached. A beautiful white paste.

**Milliners' Stamping Paste.**

Zinc oxide..... 8 ounces  
Boiled linseed oil..... 4 ounces

Mix. Any superfluous paste is to be removed from the stencils. Use with benzine.

**Paste for Pads.**

Glue, 1 pound; glycerin, 4 ounces; glucose syrup, about 2 tablespoonfuls; tannin, one-tenth ounce. Give the composition an hour or more in which to dry or set before cutting or handling the pads.

**Paste for Pads.**

Glue, 4 pounds; glycerin, 2 pounds; linseed oil,  $\frac{1}{2}$  pound; sugar,  $\frac{1}{4}$  pound; aniline dye, quantity sufficient to color. The glue is softened by soaking it in a little cold water, then dissolved, together with the sugar, in the glycerin, by the aid of heat over a water bath. To this the dye is added, after which the oil is well stirred in. It is used hot.

**Paste for Paper Pads and Bags.**

Gum arabic..... 1 ounce  
Simple syrup..... 5 ounces  
Rice starch..... 1 ounce  
Boiling water, sufficient.

Dissolve the gum in 2 ounces of water, mix the starch with 1 ounce of water, add both mixtures to the syrup and bring to a boil.

**Paste for Paper Boxes.**

Chloral hydrate..... 5 ounces  
White gelatin..... 8 ounces  
Gum arabic..... 2 ounces  
Boiling water..... 2 pints

Mix all together and let stand a day, stirring often.

**Permanent Paste for Paper Hangers.**

Dissolve one ounce of alum in one quart of warm soft water. When cold add flour to make it about the consistency of cream, then add 15 grains of rosin and  $\frac{1}{4}$  ounce of sugar of lead. The above is the preparation for a bucket of paste.

**Paste for Paperhangers.**

Wheat flour and water mixed, strained and brought to a boil, adding a little carbolic acid.

**Strong Paste for Pasteboard.**

Soak 4 parts of glue in 15 parts of cold water until soft. Gently warm the mixture until it becomes clear, then mix with 65 parts of boiling water. Mix, in another vessel, 30 parts of starch and 20 parts of cold water until it becomes a perfectly smooth paste. Gradually add this to the other mixture, which must be kept near the boiling point. Heat the whole mass for a few minutes. A little carbolic acid may be added to prevent souring.

**Paste for Photographs.**

Arrowroot ..... 10 parts  
Water ..... 100 parts  
Gelatin ..... 1 part  
Alcohol ..... 10 parts  
Phenol, quantity sufficient.

Mix the arrowroot with a small quantity of water and boil four or five minutes. Soak

the gelatin in the 100 parts of water, and mix with the arrowroot. When cold add the alcohol and a few drops of phenol.

**Paste for Photographers.**

Rice starch..... 1 ounce  
Gelatin .....  $\frac{1}{2}$  ounce  
Water ..... 10 ounces

Heat, stirring well, until the liquid becomes thick and glossy.

**To Make Printers' Rollers.**

For ordinarily fast presses on book work, the following is a good composition: Ten and one-half pounds best glue,  $\frac{2}{3}$  gallons black molasses or honey, 2 ounces Venice turpentine, 12 ounces glycerin.

**Paste for Store Use.**

Flour ..... 4 ounces  
Powdered gum arabic..... 1 ounce  
Glycerin ..... 1 fl. ounce  
Salicylic acid..... 60 grains  
Water ..... 2 pints

Mix all in a mortar, pass through a sieve, boil for a few moments, stirring to prevent burning. Avoid contact with iron.

**Stereotypers' Paste.**

Take 5 ounces of flour, 7 ounces of white starch, a large tablespoonful of powdered alum, and 4 quarts of water. Put the flour, starch and alum into a saucepan, and mix with a little of the water, cold, until the whole becomes of the consistency of thick cream. Then gradually add the remainder of the water, stirring well meanwhile to prevent lumps. Put the mixture over the fire and stir until it boils; then let it stand until quite cold, when it should look like jelly. When ready for work, add Spanish whiting, the mixture not to be too stiff to spread readily with the paste brush. Put through a fine wire sieve with a stiff brush, and it is ready for use.

**Paste for Paper on Tinfoil and Metal.**

Rye flour..... 8 ounces  
Solution of caustic soda  
(1:100) ..... 2 pints

Mix and heat, stirring constantly. Then add Venice turpentine..... 15 drops  
Stir well.

**Trunkmakers' Paste.**

To 1 pound of the best wheat flour add 2 tablespoonfuls of very finely powdered rosin and 1 tablespoonful of alum. Mix well together. Add distilled or rain water, stirring all the time until the mixture is of the consistency of a thinnish cream. Place in a saucepan over a clear fire and heat, stirring from the bottom all the time to prevent the formation of lumps. When it becomes of a stiff consistency so that the spoon will stand upright, it is sufficiently cooked. Remove from the fire and cover closely until cold.

**Paste for Mounting Botanical Specimens.**

Tragacanth, in powder.... 30 parts  
Gum arabic ..... 20 parts  
Glycerin ..... 30 parts  
Water ..... 60 parts  
Mercury bichloride..... 1 part  
Boiling water..... 240 parts

Mix the gums with the glycerin and water in a mortar with vigorous stirring. Dissolve the bichloride in the boiling water and add the solution to the mixture. When cold, a few drops of oil of cloves or wintergreen may be added.



**Paste for Mounting Ferns and Seaweeds.**

Gum arabic.....	5 ounces
White sugar.....	3 ounces
Starch.....	2 ounces
Water.....	1 pint

Mix, dissolve and boil.

**Paste for Entomologists.**

Isinglass solution.....	1 part
Mastic varnish.....	1 part

Mix.

**Paste for Entomologists.**

Dissolve gum ammoniac in alcohol and add isinglass. Use gentle heat.

**Mounting Starches and Pollens.**

Selected gum arabic.....	2 ounces
Glycerin.....	1½ fl. ounces
Distilled water.....	1½ fl. ounces
Thymol.....	1 grain

These are all placed in a wide-mouthed bottle, which is corked carefully to exclude the dust, and placed in a warm situation. It takes several days to effect a perfect solution, the mixture being stirred up occasionally. When all is dissolved, strain through linen or filter through absorbent cotton. After filtration mountant is best preserved in compressible tubes.

**Paste for Mounting Organic Specimens.**

Make the following solutions:

(a.) Wheat flour, beat to a batter with 16 ounces of cold water, then add 32 ounces of boiling water.

(b.) Gum acacia, 2 ounces, dissolved in 4 ounces of boiling water.

(c.) Alum, 2 ounces, dissolved in 4 ounces of boiling water.

(d.) Lead acetate, 2 ounces, dissolved in 4 ounces of boiling water.

(e.) Corrosive sublimate, 10 grains, dissolved in 1 ounce of water.

Mix (a) and (b) while hot, keep on a gentle fire; stir in (c), stirring constantly, then add (d) and finally (e) stirring briskly.

**Paste for Shells and Other Specimens.**

Gum arabic.....	5 ounces
Sugar.....	2 ounces
Water.....	10 ounces
White lead.....	½ ounce

Dissolve the gum and sugar in the water and stir in the white lead, rubbed up with a small quantity of the solution.

**Naturalists' Paste.**

Mucilage of acacia.....	8 ounces
Starch, powdered.....	1 ounce
Lemon juice.....	½ ounce

Mix well.

cloths are piled upon each other, placing a layer of powder between them. They are then pressed, taken apart and dried.

**Polishing Cloths for Brass or Silver.****Cloth No. 1.**

Flour of emery, finest....	5 parts
Castile or ivory soap....	10 parts
Water, q. s., about.....	50 parts

**Cloth No. 2.**

Fine tripoli or jewelers' rouge.....	5 parts
Castile soap.....	10 parts
Water, q. s.	

Dissolve the soap in the water and thoroughly mix in the powders. Soak the cloths in square pieces in the solution, wring out and dry. The coarser cloth should be used first; finish with chamois.

**Polishing Cloths.**

Castile soap.....	4 ounces
Water.....	20 ounces
Tripoli.....	2 ounces

Dissolve the soap and add the tripoli, mix well. Dip pieces of pure wool cloth of convenient size in the solution, allow to dry.

**Polishing Cloths.**

White soap.....	5 ounces
Water.....	2 pints
Infusorial earth.....	5 ounces

Prepare as directed in the preceding.

**Polishing Paste, Soft Red.**

Red oxide of iron,  
Rotten stone, of each, equal parts.  
Mix and make into a stiff paste with equal parts of vaseline and soft soap.

**Polishing Paste, Hard.**

Rotten stone.....	4½ pounds
Oxalic acid.....	4 ounces
Oil of turpentine.....	1 ounce
Sweet oil.....	3 ounces
Boiling water.....	16 ounces

Dissolve the acid in the water, add the rotten stone and incorporate the other ingredients to make a stiff paste.

**Polishing Paste.**

Tripoli.....	1 pound
Whiting.....	1 pound
Powdered pumice.....	8 ounces
Kerosene.....	3 ounces
Oleic acid.....	4 ounces
Petrolatum, enough to make a paste.	

Mix.

**Polishing Paste.**

Rotten stone.....	1 pound
Soft soap.....	½ pound
Oil of amber.....	1 ounce
Water, enough to make a soft paste.	

Mix.

**Gilding Paste.**

Gold chloride.....	36 grains
Potassium cyanide.....	60 grains
Water.....	1 dram
(or sufficient.)	

Dissolve the gold chloride in half the water, and the potassium cyanide in the remainder; mix the two solutions, let stand 15 minutes, and thicken the mixture to a paste with

Prepared chalk.....	100 grains
Cream of tartar.....	5 grains

Apply the paste to the surface to be gilded (which must be perfectly clean), let stand

**METAL POLISHES****Polishing Cloths.**

Dip flannel cloths into a solution of 20 parts of dextrin and 30 parts of oxalic acid in 20 parts of logwood decoction; wring them gently and sift over them a mixture of finely powdered tripoli and pumice stone. The moist

an hour and polish with chamois. This is said to be an excellent preparation for any metallic surface except iron or steel, the coating, with proper care, lasting many months.

#### Gilding Paste.

Gold and sodium chloride.....	1 dram
Potassium cyanide.....	2 drams
Water .....	2 drams

Put the potassium cyanide in a mortar and powder. Add the solution of gold in the water. Mix well and gradually add precipitated chalk to make a paste. Apply as directed in the preceding formula.

#### Silver Plating Paste.

Any odd pieces of silver may be utilized, if for plating metallic articles, by placing them in an ounce of nitric acid, and boiling them for an instant. The acid having dissolved the silver, throw in a good handful of common salt, then make into a paste with common whiting. The paste is to be applied with wash leather dampened in water.

#### Silver Plating Paste.

Silver nitrate.....	1 ounce
Potassium cyanide.....	4 ounces
Water .....	4 ounces
Precipitated chalk, sufficient.	

Dissolve the silver nitrate and potassium cyanide separately in some of the water. Mix and add chalk to make a paste.

#### Silver Plating Paste, Imitation.

Tin dust.....	1 ounce
Mercury .....	4 ounces

Rub together until an amalgam is formed. Add chalk to make a thick paste.

#### Polishing Pomade.

Five pounds lard or yellow vaseline is melted and mixed with 1 pound fine rouge.

#### Polishing Pomade.

Two pounds palm oil and 2 pounds vaseline are melted together, and then 1 pound rouge, 12 ounces tripoli and 1 ounce oxalic acid are stirred in.

#### Polishing Pomade.

Four pounds fatty petroleum and 1 pound lard are heated and mixed with 1 pound rouge.

The polishing pomades are generally perfumed with nitrobenzole, and filled in tin boxes.

#### Polishing Pomade.

Prepared chalk.....	4 ounces
Kieselguhr .....	4 ounces
Vaseline, enough to make a pomade.	

Mix.

#### Polishing Pomade.

Ferric oxide.....	8 ounces
Kieselguhr .....	8 ounces
Lubricating oil.....	4 ounces
Vaseline, enough to make a pomade.	

Mix.

#### Metal Polishing Pomade.

Petrolatum .....	1 part
Emery flour.....	50 parts
Jewelers' rouge.....	50 parts
Mutton suet.....	40 parts
Oleic acid.....	40 parts

Melt the suet and oleic acid together over a water bath, and when thoroughly mixed remove from the fire. When cooled but still soft, add the powders, and rub until they are evenly distributed throughout the mass.

#### Polishing Soap.

Liquid curd soap, 20 to 25 pounds, is intimately mixed with about 30 pounds of Swedish chalk and  $\frac{1}{4}$  pound Pompeian red.

#### Polishing Soap.

Liquid cocoanut oil soap, 25 pounds, is mixed with 2 pounds tripoli, and 1 pound each alum, tartaric acid, and white lead.

#### Polishing Soap.

Liquid cocoanut oil soap, 25 pounds, is mixed with 5 pounds rouge and 1 pound ammonium carbonate.

#### Polishing Soap.

Cocoanut oil, 24 pounds, is saponified with 12 pounds soda lye of 38-40° B., after which 3 pounds rouge, 3 pounds water and 1 ounce ammonia water are crutched in.

Polishing soaps are generally cut into cakes and stamped or pressed and brought into commerce with directions for use. The directions usually state that a small quantity of the soap is brought upon the metallic article to be polished with a damp flannel, and rubbed until the desired polish is obtained.

#### Polishing Soap for Silver.

Cocoanut oil soap.....	5 ounces
Water .....	6 ounces
Chalk .....	1 pound

Dissolve the soap in the water and incorporate the chalk. Mould into convenient pieces.

#### Polishing Soap.

Common soap.....	1 pound
Powdered pipeclay.....	8 pounds
Tartaric acid.....	1 ounce

Grind together until pasty, then press into molds.

#### Polishing Soap.

Saponified cocoanut oil....	10 pounds
Kieselguhr .....	2 pounds
Alum .....	1 pound
Flake white.....	1 pound
Tartaric acid.....	$\frac{1}{4}$ pound

Mix well together and press into molds.

#### Polishing Soap.

Liquid cocoanut soap....	25 pounds
Tripoli .....	3 pounds
Alum .....	1 pound
Tartaric acid.....	1 pound
White lead.....	1 pound

Mix well together and press into molds.

#### Putz Pomade.

"Putz pomaden" is the German for polishing pomades, with which they are practically identical, being composed of the same ingredients. Some formulas for these preparations are given below:

#### Putz Pomade.

Charcoal, fine powder....	14 ounces
Iron oxide (subcarbonate). ..	3 ounces
Oleic acid.....	6 ounces
Stearic acid.....	3 ounces
Petroleum .....	6 fl. ounces
Nitrobenzole .....	3 drams
Oil of citronella.....	1 dram

Mix, heat, and pass through a paint mill or sieve.

#### Putz Pomade.

Oxalic acid.....	1 part
Iron peroxide.....	15 parts
Powdered rotten stone....	20 parts
Palm oil.....	60 parts
Petrolatum .....	4 parts

Pulverize the acid and add the rouge and rotten stone, mixing thoroughly. Sift to remove all grit, then gradually add the palm oil and petrolatum and incorporate. Add nitrobenzole or oil of lavender to suit. Apply with a piece of flannel, rubbing off with a piece of soft paper, and polish with chamois.

#### Putz Pomade.

Japan wax.....	2 ounces
Oleic acid.....	10 ounces
Precipitated silica.....	5 ounces
Ferric oxide.....	2 ounces

Melt the wax and acid and incorporate the powders. By increasing the wax a harder paste may be made.

#### Putz Pomade.

Ferric oxide.....	8 ounces
Paraffin.....	2 ounces
Lubricating oil.....	6 ounces
Oleic acid.....	1 ounce
Nitrobenzole.....	1 dram

Melt the paraffin in the oil and gradually add the other ingredients.

#### Putz Pomade.

Sodium carbonate, dry....	5 ounces
Tallow soap.....	20 ounces
Emery, powdered.....	6 pounds
Water.....	4 pints

Mix. Heat on a water bath with constant stirring, until a smooth paste is obtained.

#### Putz Pomade.

Iron carbonate.....	1 pound
Petrolatum.....	1 pound
Nitrobenzole.....	1 dram

Mix intimately.

#### Putz Pomade.

Rotten stone.....	1 pound
Iron carbonate.....	3 pounds
Lard oil, enough to make a paste.	

Mix well.

#### Putz Pomade.

Iron oxide.....	1 pound
Powdered pumice stone....	3 pounds
Oleic acid, enough to make a paste.	

Mix intimately.

#### Liquid Putz; Polishing Liquid.

Oxalic acid.....	1 ounce
Ferric oxide.....	2 ounces
Whiting.....	4 ounces
Water.....	1 pint

Mix, and shake before using. This makes a good polishing liquid, especially for brass, copper and metals. It may be used dry (omitting the water), or applied with a little oil with rubbing, and rubbed dry with whiting.

#### Polishing Liquid.

Ferric oxide.....	2 ounces
Kieselguhr.....	2 ounces
Nitrobenzole.....	1 dram
Liquid petrolatum.....	1 pound

Mix. Shake before using.

#### Silver Polish in Cakes.

Magnesium carbonate.....	1 ounce
Prepared chalk.....	1 ounce
Fuller's earth.....	½ ounce
Dextrin.....	30 grains
Water, enough to make a paste.	

Put in tin boxes and allow to dry. To use, moisten a cloth with ammonia water and rub on the cake of polish, then apply to the article to be polished.

#### Polishing Liquid.

Ferric subcarbonate.....	4 ounces
Liquid petrolatum.....	8 ounces
Oleic acid, enough to make	1 pint

Mix.

#### Polishing Tablets or Putz Tablets.

These are the same as hard polishing soaps. The soap may be liquefied with a little water on a water bath, and afterwards spread out in cake shape and cut into tablets.

#### Putz Tablets.

Soap, cut fine.....	1 pound
Precipitated chalk.....	2 ounces
Ferric oxide.....	1 ounce
Cream tartar.....	1 ounce
Magnesium carbonate.....	1 ounce
Water, q. s.	

Dissolve the soap in the smallest quantity of water, over a water bath. Add the other ingredients to the solution while still hot, stirring all the time to make sure of complete homogeneity. Pour the mass into a box with shallow sides, and afterwards cut into cubes.

#### Polishing Cake or Tablet for Silverware.

Magnesium carbonate....	30.0 parts
Calcium carbonate.....	30.0 parts
Dextrin.....	1.0 parts
Kieselguhr.....	15.0 parts
Water.....	15.0 parts

Moisten the powders with the water and make a stiff dough. Place this in tin boxes and let it dry. The mass is applied by rubbing with a cloth moistened with ammonia water.

#### Polishing Tablets.

Soap, in powder.....	10 pounds
Pipeclay, powdered.....	3 pounds
Sodium hyposulphite.....	2 pounds
Armenian bole, dark red..	1 pound

Mix and press into tablets.

#### To Color Polished Brass.

In the following nine formulas the brass objects are put into the boiling solutions for a longer or shorter time, according to the shade of color required:

#### To Color Polished Brass.

Potassium chlorate, 75 grains; nickel sulphate, 150 grains; water, 10 ounces. Gives a beautiful dark brown color.

#### To Color Polished Brass.

The two following solutions, when mixed (cold), separate sulphur, and brass objects immersed in the mixture become covered with iridescent crystallizations. 1. Potassium bitartrate, 75 grains; copper sulphate, 75 grains; water, 10 ounces. 2. Sodium hyposulphite, 225 grains; water, 5 ounces.

#### To Color Polished Brass.

Copper sulphate, 120 grains; ammonium chloride, 30 grains; water, 2 pints. Gives greenish shades.

#### To Color Polished Brass.

Nickel sulphate, 75 grains; copper sulphate, 75 grains; potassium chlorate, 75 grains; water, 10 ounces. Gives a yellow brown.

#### To Color Polished Brass.

Potassium chlorate, 150 grains; copper sulphate, 150 grains; water, 2 pints. Give shades of brown, from orange brown to cinnamon.



**To Color Polished Brass.**

Orpiment, 75 grains; sodium carbonate (crystals), 150 grains; water, 10 ounces. Gives a red, passing to blue, pale lilac, and finally white.

**To Color Polished Brass.**

Sulphurated potassa, 15 grains; ammonia water, 75 grains; water, 4 ounces. Use cold. After long immersion objects acquire a very beautiful color.

**To Color Polished Brass.**

Potassium chlorate, 75 grains; nickel carbonate, 30 grains; nickel sulphate, 75 grains; water, 10 ounces. Gives, after long ebullition, first a yellow-brown shade, finally a fire red.

**To Color Polished Brass.**

Copper sulphate, 435 grains; sodium hyposulphite, 300 grains; potassium bitartrate, 150 grains; water, 1 pint. Gives the brass first a rosy tint, then colors it violet and blue. If to the above are added sodium hyposulphite, 300 grains; ammoniacal sulphate of iron (ammonio-ferric sulphate), 300 grains, the tints are yellowish, then orange, rosy, and finally blue.

**Magic Polish for Brass.**

Sulphuric acid, 20 parts; pulverized potassium dichromate, 10 parts; dilute with an equal weight of water; apply well to the brass. Wash well in water, immediately wipe dry, and polish with rotten stone.

**Polish for Brass.**

Rotten stone..... 7 ounces

Oxalic acid, powdered..... 1 ounce

Mix well and use with a little water.

**Polish for Brass.**

Rotten stone..... 1 pound

Sweet oil, enough to make a paste.

Mix and use as a polish with rubbing.

**Polish for Brass, Copper, etc.**

Rotten stone..... 4 ounces

Oxalic acid, powdered..... 1 ounce

Sweet oil.....1½ ounces

Oil of turpentine, enough to make a paste.

Mix well.

**Polish for Brass, Copper, etc.**

Sulphur ..... 8 ounces

Chalk ..... 8 ounces

Vinegar, enough to make a paste.

Mix and apply to the metal, allow to dry and rub with a chamois skin.

**Polish for Brass, Copper, etc.**

Alum ..... 1 ounce

Potash lye..... 1 pound

Mix and dissolve. Apply with a rag, rub dry and polish with tripoli and a chamois skin.

**Fly Specks on Brass, Copper, etc.**

Oil of lavender..... 1 dram

Alcohol ..... 1 ounce

Water .....1½ ounces

Mix and apply with a soft sponge, without rubbing.

**Polish for Copper, etc.**

Oxalic acid..... 1 ounce

Rotten stone..... 6 ounces

Gum arabic..... ½ ounce

Sweet oil..... 1 ounce

Water, sufficient.

Mix the solids in fine powder with the sweet oil and gradually add water to make a paste.

**Polish for Copper, etc.**

Armenian bole..... 1 pound

Oleic acid, enough to make a paste.

Mix.

**Polish for Copper, etc.**

Iron oxide..... 10 ounces

Powdered pumice..... 2 pounds

Oleic acid, enough to make a paste.

Mix.

**Silvering Paste.**

Apply to the surface of the metal, rubbing well with a piece of chamois leather, a paste made of 1 part silver chloride, 3 parts pearl ashes, 1½ parts salt and 1 part whiting, made to a sufficient consistency with water. When the article is completely silvered, wash it in water containing a very little washing soda.

**Silvering Solution.**

Mix 1 dram silver nitrate, 2 drams potassium cyanide, 2 drams whiting and 2 fluid ounces of water. The articles must be perfectly cleaned and the silvering solution remain in contact with the surface to be plated for some minutes, then rub well with chamois. Great care must be observed, as the solution is very poisonous.

**Liquid Polish for Silver Plated Ware.**

Dissolve 3 to 4 drams of potassium cyanide and 8 to 10 grains of silver nitrate in 4 ounces of water. Apply with a soft tooth-brush, wash the object thoroughly with water, dry with a soft linen cloth and polish with a chamois skin.

**Polishing Powder for Silver and Nickel.**

A good treatment for silver is to wash it with a weak solution of sodium hyposulphite. After the article is thoroughly dried it is rubbed with a very fine linen rag and some ammonium carbonate. The effloresced portion of the common ammonium carbonate in very fine powder will answer. The rough surface should be rubbed with a brush, an old tooth-brush, not too stiff. The article is finally rubbed with a piece of clean chamois skin. A liquid polish for nickel ware consists of 1 fluid ounce of ammonia water, 4 ounces finest prepared chalk, and 1 pint of alcohol.

**Silver Polish.**

Ammonium carbonate, powdered ..... 1 ounce

Cuttlefish bone, powdered. 1 ounce

Chalk ..... 5 ounces

Petrolatum, enough to make a paste.

Mix well.

**Silver Polish.**

Prepared chalk..... 8 ounces

Oil of turpentine..... 2 ounces

Alcohol ..... 1 ounce

Spirit of camphor..... ½ ounce

Ammonia water..... ¼ ounce

Mix well. Apply with a sponge and rub off with chamois skin.

**Silver Polish.**

Whiting ..... 1 pound

Ammonia water..... 4 ounces

Alcohol ..... 1 pint

Mix. Put on with a sponge and rub dry with chamois skin.

**Window Glass Polish.**

Window glass constantly exposed to the action of sun and rain soon acquires a dullness, which cannot be removed by washing or scrubbing. This is due to a gradual surface decomposition of the glass and the solution of the sodium or potassium salts contained in it by the carbonic acid present in the atmosphere. Such glass can be restored to a fairly bright condition by washing with dilute hydrochloric acid, and afterward rubbing with moistened chalk or whiting.

**Window Polishing Paste.**

Prepared chalk.....	90 parts
White bole.....	5 parts
Armenian bole.....	5 parts
Water .....	50 parts
Alcohol .....	25 parts

Rub together into a smooth paste. The paste is to be rubbed on the window, allowed to dry, and then rubbed off with a cloth.

**Window Polishing Paste.**

Prepared chalk.....	1 pound
Denatured alcohol.....	1 pint
Ammonia water.....	1 pint

Mix well. Rub on with a sponge, allow to dry and polish with clean white paper.

**Window Polishing Paste.**

Castile soap.....	2 ounces
Boiling water.....	3 ounces

Dissolve and add the following in fine powder:

Precipitated chalk.....	4 ounces
French chalk.....	3 ounces
Tripoli .....	2 ounces

Mix and reduce with water to the consistency desired.

**Window Cleaning Paste.**

Mix with 1 part olive oil, 1 part of ammonia water, 2 parts of lime and 1 part of water to a thick paste.

If after having followed the ordinary procedure of cleaning a piece of glass, a small sack be made of coarse cheese cloth and filled with lampblack and the glass thoroughly polished with this, and then polished with a clean cloth, it will assume a brilliancy unobtainable by any other means.

**Metal Polishing Cream.**

Alcohol .....	32 parts
Ammonia water.....	3 parts
Water .....	45 parts
Carbon tetrachloride.....	6½ parts
Kieselguhr .....	8 parts
White or red bole.....	4 parts
Chalk .....	8 parts

Mix. The addition of the carbon tetrachloride ensures that the mixture is non-inflammable.

**Universal Metal Polish.**

Mix and grind together until reduced to the finest powder 15 parts of red oxide of iron (jewellers' rouge) and 20 parts of pumice stone. Sift through gauze, and rub up with 60 parts of palm oil, 4 parts of petrolatum and 4 parts of oil of mirbane.

**Meriden Metal Polish.**

Olein, 10 parts; petroleum, 5 parts; ammonia water (sp. gr. 0.96), 5 parts; water, 30 parts; finely levigated diatomaceous earth, 30 parts; denatured alcohol, 5 parts; water, 15 parts. Mix according to art.

**Metal Polish.**

Soft paraffin .....	1 pound
Paraffin wax.....	¼ pound
Paraffin oil.....	1 pound
Tripoli .....	3 pounds

Melt the paraffin and paraffin wax together, remove from the source of heat, and stir in the paraffin oil. When homogeneous, incorporate the tripoli.

**Creamy Silver Polish.**

Precipitated chalk.....	1 pound
Infusorial earth.....	1 pound
Lard oil potash.....	1 pound
Solution of potassium hydroxide .....	2 ounces
Water, a sufficient quantity.	

Mix. Incorporate the caustic solutions in the soft soap, using a wooden paddle. Mix the powders and add enough water to make a very stiff paste. Then beat in the soap mixture. The mass gets quite soft and usually but little water is required to give it the desired consistence.

**Silverware Polish.**

Shave up one large cake of ivory soap and dissolve it in 20 ounces of water. Add 2 ounces of glycerin, mix thoroughly, and gradually add 1 pound of precipitated chalk. Stir the mixture thoroughly, and then add one ounce of potassium cyanide which has been previously dissolved in 6 ounces of water. Mix again.

**Polish for Silverware.**

Prepared chalk.....	2 parts
Oil of turpentine.....	4 parts
Stronger ammonia water.....	4 parts
Water .....	10 parts

Mix the ammonia water and oil of turpentine by agitation, and rub the chalk in the mixture. Finally rub in the water gradually or mix by agitation.

**Paste Metal Polish.**

Precipitated silica.....	2½ pounds
Kieselguhr .....	1 pound
Crude oleic acid.....	5 pounds
Paraffin wax.....	1 pound
Nitrobenzole .....	1 dram

Melt the paraffin wax with the oleic acid, then grind with the other ingredients under edge runners.

**Liquid Metal Polish.**

Putty powder.....	6 ounces
Kieselguhr .....	10 ounces
Bath brick, in fine powder .....	2 ounces
Indian red.....	10 ounces
Emery, in finest powder.....	1 ounce
Rotten stone.....	1½ ounces

Mix the powders well together and add gradually:

Wood alcohol.....	30 fl. ounces
Oil of turpentine.....	20 fl. ounces
Paraffin oil.....	100 fl. ounces
Ammonia water.....	20 fl. ounces
Oil of citronella.....	½ fl. ounce

Mix and apply with a cloth.

**SHOW GLOBE COLORS.****Blue, for Show Globes.**

Distilled water.....	2 pints
Copper sulphate.....	1 ounce
Alum .....	1 ounce
Sulphuric acid.....	6 drams

Mix and filter.

**Pale Blue for Show Globes.**

Distilled water..... 7 pints  
 Copper sulphate..... 1 pound  
 Dissolve and filter.

**Dark Blue, for Show Globes.**

Distilled water..... 1 gallon  
 Ammonia water..... 4 ounces  
 Copper sulphate..... 1 ounce

Mix. Any desired shade can be obtained by varying the proportion of ammonia water and copper salt.

**Dark Blue, for Show Globes.**

Copper sulphate..... 2 ounces  
 Sulphuric acid.....  $\frac{1}{2}$  ounce  
 Water ..... 20 ounces

Mix.

**Dark Blue, for Show Globes.**

Copper sulphate..... 80 grains  
 Ammonia water..... 2 fl. ounces  
 Water ..... 16 pints

Mix.

**Dark Blue, for Show Globes.**

Copper sulphate..... 160 grains  
 Solution of potash..... 1 pint  
 Glycerin .....  $\frac{1}{4}$  pint  
 Water ..... 16 pints

Dissolve the copper sulphate in sufficient water, add to the solution of potash, then glycerin, until complete solution results. Finally add the remainder of the water.

**Dark Blue, for Show Globes.**

Solution of indigo in sulphuric acid, diluted with water.

**Dark Blue, for Show Globes.**

A solution of soluble blue in oxalic acid and dilute to the required shade.

**Blue for Show Globes.**

The intensity of the color can be increased by adding glycerin in place of part of the water. The copper colors are very pretty in day time, but they absorb light at night and do not shine up well.

**Carmine, for Show Globes.**

Solution of iron per-  
 chloride ..... 10 drops  
 Potassium sulphocyanide.. 10 grains  
 Water ..... 1 gallon

Mix.

**Carmine, for Show Globes.**

Dissolve carmine in ammonia water, and dilute with water.

**Carmine, for Show Globes.**

Dissolve cochineal in ammonium chloride, and dilute with water.

**Carmine, for Show Globes.**

Exhaust 1 ounce of cochineal with 1 gallon of hot water, adding  $\frac{1}{2}$  ounce of sulphuric acid, and diluting with water to the proper tint.

**Carmine, for Show Globes.**

Cudbear ..... 3 drams  
 Water ..... 1 gallon

Mix, and add:

Nitric acid..... 4 ounces  
 Let stand 48 hours and filter.

**Carmine, for Show Globes.**

Fuchsiine ..... 20 grains  
 Acetic acid..... 2 fl. ounces  
 Water ..... 8 pints

Mix.

**Carmine, for Show Globes.**

Take a red cabbage, chopped fine, extract the color by maceration with vinegar, and dilute to desired shade with water; finally add 5 or 10 per cent of alcohol.

**Carmine, for Show Globes.**

Add 4 ounces sulphuric acid to 1 gallon water, and digest 8 ounces red rose leaves in the solution for 24 hours.

**Carmine, for Show Globes.**

Dissolve madder lake in ammonium sesquicarbonate and dilute with water.

**Carmine, for Show Globes.**

Color 2 gallons of water with sufficient compound solution of iodine, and add about 4 ounces of hydrochloric acid.

**Carmine, for Show Globes.**

Carmine ..... 3 to 5 grains  
 Tin chloride..... 3 to 5 grains  
 Ammonia water..... 1 dram  
 Water, enough to make.. 8 pints

Dissolve the carmine in the water of ammonia; add the tin chloride and water.

**Carmine, for Show Globes.**

Cobalt carbonate..... 2 grams  
 Hydrochloric acid, q. s.  
 Ammonium carbonate, q. s.  
 Water, enough to make 4,000 grams

Dissolve the cobalt carbonate in the acid, add water and ammonium carbonate in solution, until the precipitate redissolves. Filter.

**Carmine, for Show Globes.**

The best and most lasting of these carmine colors is that produced by cobalt. The solution of carmine in water comes next. The colors made from vegetables soon fade and the iodine and iron colors cannot bear the sunlight.

**Crimson, for Show Globes.**

Distilled water..... 960 parts  
 Hydrochloric acid..... 36 parts  
 Iodine ..... 2 parts  
 Potassium iodide..... 2 parts

Mix and dissolve.

**Carmine, for Show Globes.**

Solution of iron chloride.. 1 ounce  
 Ammonia water..... 2 ounces  
 Acetic acid..... 2 ounces  
 Alcohol ..... 8 ounces  
 Water ..... 2 gallons

First, clarify the water with the alum, 6 grains to the gallon, then filter. Mix the other ingredients and add to the water; the whole is again filtered. The main object of the alcohol is to prevent freezing.

**Crimson, for Show Globes.**

Alkanet root..... 1 ounce  
 Oil of turpentine..... 20 ounces

Digest the root in powder in the oil of turpentine for a week and filter.

**Crimson, for Show Globes.**

Crimson show globe colors are very fine and showy; they will last fairly well, but



should not be exposed to the rays of the sun.

#### Green, for Show Globes.

Dissolve several large copper pennies and a nickel in nitric acid. This solution when diluted with water, furnishes a beautiful, permanent green color, which can be adjusted to any desired shade by varying the proportion of diluent.

#### Emerald Green, for Show Globes.

Nickel .....	85 grams
Hydrochloric acid.....	132 grams
Nitrous acid.....	55 grams
Distilled water, enough to make.....	4,000 grams

Dissolve the nickel in the hydrochloric acid, add the water, then the nitrous acid.

#### Olive Green, for Show Globes.

Copper sulphate.....	70 grams
Hydrochloric acid.....	34 grams
Iron subcarbonate.....	8 grams
Water, enough to make.....	1,000 grams

Dissolve the copper sulphate in the water; dissolve the iron carbonate in the acid; mix and filter.

#### Sea Green, for Show Globes.

Copper acetate.....	4 grams
Acetic acid.....	36 grams
Water, enough to make.....	1,000 grams

Add the acetic acid to the copper acetate and triturate with the water till dissolved.

#### Grass Green, for Show Globes.

Copper sulphate.....	35 grams
Ammonium chloride.....	35 grams
Water, enough to make.....	1,000 grams

First dissolve the copper salt in the water, then add the ammonium chloride.

#### Dark Green, for Show Globes.

Dissolve 8 ounces of copper sulphate and 40 grains (or quantity sufficient) of potassium dichromate in two gallons of water.

#### Dark Green, for Show Globes.

Copper sulphate.....	1 dram
Ammonia water.....	1 fl. dram
Water .....	1 pint

Mix and dissolve.

To the above, then add, previously dissolved in 1 pint water, potassium dichromate 40 grains, in amount sufficient to cause a slight permanent precipitate of cupric chromate. Then add enough water to bring to the measure of 16 pints or more. The subsequent addition of a small amount of ammonia water redissolves any precipitate of cupric chromate. In this, as in all other formulas for show-bottle colors, the best results are obtained by using distilled water. If time permits, a further benefit results by letting the color stand for some weeks in plain bottles before filtering into the show bottle. A greater depth of green results from increasing the amount of solid ingredients, in the proportion as given. The novice should bear in mind that show-bottle colors will appear to the eye much more attenuated when in a mortar than when in the bottle.

#### Green, for Show Globes.

Dissolve 4 or 5 nickel coins in nitric acid, taking care to put the porcelain dish out of doors, as the fumes of nitrous acid evolved are very poisonous. Then dilute with a gallon of distilled water and filter. By taking more or less water the desired shade can be obtained.

#### Green, for Show Globes.

The prettiest of all green colors is that made of nickel coins, as directed in the preceding formula. It is refulgent and crystal-like in the daytime, and at night reflects the gaslight behind it for a long distance. The copper colors are also pretty and permanent. Care should be taken, not to make the colors too dark.

#### Orange, for Show Globes.

Make a solution of potassium dichromate in water, and darken with sulphuric acid. This is a beautiful lasting color, equally brilliant by day and night. Use only distilled water.

#### Purple, for Show Globes.

Infusion of logwood.....	1 gallon
Spirit of ammonia, q. s.	

Mix.

#### Purple, for Show Globes.

Sugar lead.....	3 ounces
Powdered cochineal.....	1 dram
Water, q. s.	

Mix.

#### Purple, for Show Globes.

Add indigo sulphate nearly neutralized with chalk to an infusion of cochineal until it turns purple.

#### Purple, for Show Globes.

Verdigris .....	1 ounce
Ammonia water.....	1 ounce
Water .....	6 ounces

Mix and dissolve.

#### Purple, for Show Globes.

Salicylic acid.....	1 grain
Alcohol .....	2 drams
Tincture of iron chloride.	5 drops
Water, sufficient.	

Dissolve the acid in the alcohol; to it add, first, the tincture, and then enough water to produce the desired color.

#### Purple, for Show Globes.

The purple colors are very pretty when freshly made. But they are apt to fade and soon become unsightly.

#### Pink, for Show Globes.

Cobalt oxide.....	1 gram
Nitric acid.....	49 grams
Water, enough to make.....	1,000 grams

Dissolve the cobalt oxide in the acid, then add the water.

#### Pink, for Show Globes.

Cobalt nitrate.....	100 to 270 grains
Ammonium carbonate .....	5 av. drams
Water .....	18 pints

Triturate the cobalt nitrate in a mortar with the ammonium carbonate, adding water enough until solution is effected, and the first-formed precipitate of cobalt carbonate is redissolved, then adding the remainder of the water, treating otherwise as directed above. The smaller quantity of cobalt nitrate will suffice where a large bulk of fluid is interposed between the light and the window; the greater when the reverse.

#### Pink, for Show Globes.

Dissolve in water, separately, four ounces ammonium carbonate and one dram of cobalt chloride; mix the solutions and add at once sufficient water to make 2 gallons.

**Blood Red, for Show Globes.**

Distilled water.....	2 gallons
Ammonia water.....	1 pint
Nitric acid.....	8 ounces
Cobalt, metallic.....	2 ounces
Alum .....	1 ounce

Dissolve the cobalt in the nitric acid, dilute largely with water, add the ammonia water and alum in solution, and finally the remainder of the water. Allow to stand for a week and filter.

**Rose, for Show Globes.**

Cudbear .....	2 ounces
Water .....	10 ounces

Infuse (cold) for a day or so, filter, and add to the water till required shade is produced, and add to each gallon:

Stronger ammonia water.. ½ ounce

Mix.

**Red, for Show Globes.**

Distilled water.....	2 gallons
Sulphuric acid.....	5 ounces
Cochineal .....	1½ ounces
Potassium bitartrate.....	1 ounce

Dissolve the cochineal and potassium bitartrate in water, dilute largely, add the sulphuric acid and the remainder of the water and filter.

**Bright Red, for Show Globes.**

Distilled water.....	2 gallons
Sulphuric acid.....	2½ ounces
Cochineal .....	2 ounces
Alum .....	2 ounces
Pure cream tartar.....	1 ounce

Prepare as directed in the preceding formula.

**Dark Red, for Show Globes.**

Distilled water.....	1 gallon
Potassium iodide.....	1 ounce
Alum .....	1 ounce

Mix, dissolve and filter.

**Red, for Show Globes.**

Solution of iron per- chloride .....	20 drops
Potassium sulphocyanide..	20 drops
Water .....	1 gallon

Mix, dissolve and filter.

**Red, for Show Globes.**

The red colors made with cobalt are the best for the purpose and most permanent. The solutions of carmine and other coloring matter are fairly good, the best being those that contain a small amount of alum. The red colors made with iron or iodine are very beautiful when freshly made, but these compounds soon decompose in sunlight and the colors fade.

**Violet, for Show Globes.**

Mix together solutions of cobalt nitrate and ammonium sesquicarbonate, adding a sufficiency of ammonio-sulphate of copper to strike the required color.

Neutral metallic salts that have neither the tendency to oxidize nor to reduce, are best employed in the preparation of show globe colors. Distilled water should always be used. After an exposure of the liquid for a week to the light, it is often necessary to again filter it, in order to make it bright and perfectly transparent.

**Violet, for Show Globes.**

Cudbear .....	1 ounce
Ammonia water.....	4 ounces
Distilled water.....	1 gallon

Mix and allow to stand for one week. Filter. Very pretty but not lasting.

**Yellow, for Show Globes.**

Iron sesquichloride.....	½ pound
Hydrochloric acid.....	1 quart

Dissolve and dilute with water.

**Amber, for Show Globes.**

Dragon's blood, in coarse powder .....	1 part
Sulphuric acid.....	4 parts

Mix. When thoroughly dissolved, dilute with cold distilled water till the required tint is obtained.

**Yellow, for Show Globes.**

Dissolve gamboge or annatto in solution of potash, dilute with water, and add a little alcohol.

**Canary, for Show Globes.**

Make a solution of picric acid in alcohol and add to water to produce the desired shade.

**Yellow, for Show Globes.**

A solution of equal parts of potassium nitrate and potassium chromate.

**Yellow, for Show Globes.**

A solution of potassium dichromate. Add a few drops of sulphuric acid, thereby producing darker shades.

**Yellow, for Show Globes.**

The colors made with potassium dichromate, adding sulphuric acid to suit, are the most brilliant and lasting ones.

**Multi-Color, for Show Globes.**

First ascertain the capacity of the bottle and divide by seven, to find the volume of each solution or liquid to be employed. The fluids should, in the order named, be carefully poured down the side of the bottle, held in a slightly inclined position, or through a glass tube inserted into it.

1st. One volume of sulphuric acid C. P., tinted blue with indigo sulphate; 2d, one volume of C. P. chloroform; 3d, one volume of glycerin, slightly tinted with caramel; 4th, one volume of castor oil, colored with alkanet root or alkannin; 5th, one volume 40 per cent alcohol, slightly tinted with green aniline; 6th, one volume of cod liver oil, containing 1 per cent oil of turpentine; 7th, one volume of 94 per cent alcohol, slightly tinted with violet aniline.

The liquids are held in place by force of gravity, and alternate with fluids which are not miscible, so that the strata or layers are clearly defined and do not mingle by diffusion, as is the case when miscible liquids as glycerin and water are brought in direct contact with each other. Perhaps it is necessary to add that the colors suggested should be employed in quantities only sufficient to impart a pronounced tint to the fluids; too deep colors look dead, and detract from the brilliancy of the combination.

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**PHOTOGRAPHY.**

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**Coloring Photos.**

Take any unmounted photographic print which it is desired to color, and place it on a pane of glass, the face toward the

glass. In this way the image will be seen through the back of the paper. With an ordinary pencil mark on the back of the print a rough tracing of the outlines of the photograph, marking the places where the colors must afterward be applied. When this tracing has been made, remove the photograph, lay it on blotting paper, and apply the colors to the back of the print. The colors should be spread on in flat tints, it not being necessary to use demi-tints. For example, a flesh tint is put in the face, and black or brown on the hair; if the picture is a landscape the trees are colored dark green, the sky part blue. It is important to use strong colors, which will show through the paper better. After this operation is finished, and when the colors are dry, the photograph is rendered transparent as follows:

First prepare the following solution:

Petroleum ether or benzine ..... 10 parts  
White vaseline..... 1 part

The vaseline is dissolved in the liquid, and then the mixture is ready for use. Then the photograph, which has been colored previously, is placed on some sheets of white paper, and the back of the picture is saturated first, pouring the solution on it, and rubbing with the finger to cause the mixture to penetrate, first the color and then the paper. The print is then turned face upward, and this side is saturated in the same way. After this operation the paper becomes oily and transparent, and the color begins to show through. It is left to soak thus for an hour or two, then both faces are rubbed with linen until no oily spots can be seen, when the proof is placed on white paper. The operation is then completed, and the proof has only to be pasted on cardboard, the same as other photographs. But, as the paper is still saturated with vaseline, water paste will not answer, and some varnish should be used as a cement. This process of painting, which can be used by anyone, gives very beautiful effects.

Colors which are thus applied to the back of a photograph give it a tone of admirable freshness, and the vaseline mixture brings the image out. Besides, as the colors have the thickness of the paper to pass through, they are greatly softened and thus approach nature. The variations of the tints will be seen, by transparency, when looking at the picture. As to the colors, any that are at hand can be used, whether water colors or oil colors. The essential point is to choose the most strong colors, rose, green, etc., and to put on only a very thin layer, as otherwise the vaseline cannot pass through it. If oil colors are at hand they will be better, and the resulting colors will be much prettier, for they are more striking and the vaseline passes through them better. Pastels or colored crayons can be used, but oil colors are greatly preferred to any others. If it is desired to save, and not to color, the photograph, its outline can be traced off on ordinary white paper, and the colors applied to the white paper as above described. Then it is only necessary to place it on the mount behind the photograph, care being taken to render the latter transparent, and the two must be so placed that their outlines will agree. The effect obtained is similar, and the method gives very pretty results, not showing in the least how the pictures are colored.

#### To Copy Printing on Any Paper of an Absorbent Nature.

Moisten the surface of the latter with a weak solution of iron acetate, and use a common copying press.

#### To Copy Photographs.

Soak off the print from the cardboard, if the picture is mounted, and print from it in an ordinary photographic printing frame as one would from a negative. Printing from a "positive" picture, of course, gives a negative from which any number of copies, or "positives," may be printed. This negative can be on glass or paper. If the ordinary gelatin plate is used, the exposure should be a few seconds—say 5 to 10—at a distance of 2 feet from a good 5-foot gas flame; if on silvery albumen paper it is a matter of minutes or possibly a half hour, during which time the print can be examined, and just that degree of density or depth secured that will give the most favorable results. The introduction and use of sensitive gelatin paper reduces the time of exposure to the same standard as the plates. Where the gelatin paper is not convenient, the chloride paper is equally serviceable. If the negative has been made on paper, it should, when dry, be rendered translucent by the following treatment:

Lay the negative down on a clean sheet of paper and give a coat of castor oil, applied with a rag. Then press it with a hot iron until it shows an even dark color. Use plenty of oil. If the iron is too hot it will dry out the oil, and it will be necessary to go over it with a rag again. If the iron is not hot enough, it will fail to cause the oil to penetrate the paper sufficiently. When an even color is obtained wipe off the excess of oil with a soft cloth, and the negative is ready to print. Instead of using a hot iron, the negative may be held over the stove until the oil sinks into the paper. The hot oil expels the air in the paper and fills the pores, so that on examination it will be found that the grain has disappeared, leaving a fine ground-glass effect.

#### Transferring Photographs.

To transfer a print to wood, metal, glass, or even porcelain, it suffices to well clean the object, if it is already polished, and to polish it in the contrary case, and then to spread over the surface a light coating of copal varnish. Then apply the toned and fixed print, still wet, and with a squeegee or printer's roller drive away the air bubbles and excess of varnish; allow to dry for three or four hours. Then, rubbing gently with a slightly wet sponge, gradually remove the paper; the albumen film contains the image remaining attached to the glass by the varnish. A second coating of varnish will consolidate the whole. The only defect in this process is that it reverses the images. Those who operate on pellicle, or who practice phototype, and detach the gelatin pellicles, can make a reversed print, which, in this case, the process will correct. In this way it is possible to make very beautiful slides for the lantern, which are then to be painted for this particular application. Engravings may also be transferred in the same manner.

#### Photographic Frost Pictures.

A very effective background may be imparted to photographic portraits by the following method: A concentrated solution of magnesium sulphate in beer is prepared, and the solution boiled down for a short time, in order to have the saccharine principle of the beer, which serves as a cement, slightly in excess. The preparation, if stored in a well-stoppered bottle, keeps well. The photograph is then treated in the following manner: The figure is masked in any convenient way, leaving the background open and the latter is quickly coated by means of a broad brush with the solution. It is well to apply it a



little thicker around the shoulders, in order to produce there a more vigorous crystallization. After all has been coated, the picture—which may be printed on any kind of silvered paper—is laid aside. After about 10 minutes the formation of crystals will be completed, and, at the same time, the layer will be dry. The picture is then, by means of a pad of fine cotton, dusted with gilt bronze. If it is desired to strengthen some portions of the picture, it is only necessary to breathe upon them. Finally, the superfluous powder is dusted off, when the portrait will appear on a bronzed ground covered with frost-like crystals. To protect the picture from being injured, it is necessary to coat it with matt varnish. The gilt bronze may be replaced by any other suitable powder, and the crystallization may as well be applied to the film side of the negative instead of to the print. In this case the crystalline forms will appear lightly on a darker ground, which also gives a good effect.

#### Microscopic Drawing.

Place the body of the microscope horizontally; remove the mirror; put the slide on the stage; condense the light upon it by means of the bull's eye, taking care to center the light; attach the concave mirror to the front of the eyepiece by means of a spring or a piece of thin wood. Have its surface at an angle of 45° with the plane of the interior glass of the ocular. This will project an image of the object on the paper beneath. If the outer ring of light is circular, there will be no distortion. With a black cloth exclude all outer light, covering both your head and the instrument. You can draw any section easily in this manner, including magnifications of 600 diameters.

#### Light in the Photographer's Dark Chamber.

The window of the dark chamber may be made of glass coated with the following composition:

Lead acetate..... 10 parts  
Water .....100 parts  
Gelatin, sufficient.

Dissolve, and add, with constant agitation:

Potassium chromate..... 6 parts  
Potassium dichromate.... 4 parts

#### Light in the Photographer's Dark Chamber.

Dissolve 5 parts of carmine in 40 parts of ammonia water. Mix water, 450 parts; nitric acid, 2 parts; glycerin, 7 parts; and dissolve in the mixture 50 parts of gelatin; mix the two solutions and apply hot to the glass with a flat brush as many coats as may be required. The light is made more pleasant by covering the window with one or two thicknesses of thin yellow paper.

#### Pyro Developer.

(Solution No. 1.)

Sodium sulphate..... 5 ounces  
Sodium carbonate.....2½ ounces  
Water ..... 30 ounces

Dissolve.

(Solution No. 2.)

Oxalic acid..... 15 grains  
Pyrogallol acid..... 1 ounce  
Water ..... 24 ounces

Dissolve.

To use, take of

Solution No. 1..... 1 ounce  
Solution No. 2..... ½ ounce  
Water ..... 3 ounces

Mix.

#### Rodinol Developer.

Rodinol ..... 1 ounce  
Water ..... 30 ounces

Mix. Use repeatedly.

#### Bromo-Hydrochinon Developer.

(Solution No. 1.)

Sodium sulphate..... 3 ounces  
Hydrochinon ..... ½ ounce  
Potassium bromide..... ¼ ounce  
Distilled water..... 25 ounces

Dissolve.

(Solution No. 2.)

Sodium carbonate..... 6 ounces  
Water ..... 25 ounces

Dissolve.

For use, mix equal volumes of the two solutions.

#### Metol Developer.

(Solution No. 1.)

Metol .....100 grains  
Sodium sulphate..... 1 ounce  
Water ..... 8 ounces

Mix and dissolve.

(Solution No. 2.)

Potassium carbonate..... 1 ounce  
Water ..... 10 ounces

Mix and dissolve.

For use, mix Solutions No. 1 and No. 2, equal parts, and six parts of water.

#### Metol and Hydrochinon Developer.

(Solution No. 1.)

Metol ..... 1 ounce  
Hydrochinon ..... ½ ounce  
Sodium sulphite..... 6 ounces  
Hot water..... 80 ounces

Mix and dissolve.

(Solution No. 2.)

Sodium carbonate..... 5 ounces  
Water ..... 80 ounces

Mix and dissolve.

To develop, take of

Solution No. 1..... 1 ounce  
Solution No. 2..... 1 ounce  
Water ..... 2 ounces

Mix.

#### Metol-Bicarbonate Developer.

Metol ..... 1 ounce  
Water ..... 60 ounces

Dissolve, and add

Sodium sulphite..... 6 ounces  
Sodium bicarbonate..... 3 ounces

Mix and dissolve.

#### Pyrocatechin Developer.

(Solution No. 1.)

Pyrocatechin ..... 2 ounces  
Water, enough to make...100 ounces

(Solution No. 2.)

Potassium carbonate..... 10 ounces  
Water, enough to make...100 ounces

For use, take equal parts of Solutions No. 1 and No. 2, and water.

#### Pyrocatechin-Phosphate Developer.

(Solution No. 1.)

Sodium sulphite.....386 grains  
Pyrocatechin ..... 77 grains  
Water ..... 8 ounces

Mix and dissolve.

## -(Solution No. 2.)

Sodium phosphate.....725 grains  
Caustic soda.....77 grains  
Water ..... 8 ounces

Mix and dissolve.

For use, mix

Solution No. 1..... 1 part  
Solution No. 2..... 1 part  
Water .....1 to 3 parts

**Pyrocatechin Developer.**

Sodium sulphite.....25½ drams  
Caustic soda.....3½ drams  
Distilled water..... 14 ounces

Dissolve and add

Pyrocatechin .....308 grains  
For use, dilute with 15 parts of water.

**Adurol Developer.**

Sodium sulphite..... 4 ounces  
Potassium carbonate..... 3 ounces  
Adurol ..... ½ ounce  
Water .....10 ounces

Mix. For use, take 1 part to 3 parts of water.

**Glycin Developer.**

## (Solution No. 1.)

Sodium sulphite.....1¼ ounces  
Sodium carbonate..... ¾ ounce  
Glycin ..... ½ ounce  
Hot water.....10 ounces

Mix and dissolve.

## (Solution No. 2.)

Potassium carbonate.....1¼ ounces  
Water .....10 ounces

Dissolve.

For use, take

Solution No. 1..... 1 ounce  
Solution No. 2..... 2 ounces  
Water ..... 1 ounce

Mix.

**Diogen Developer.**

Sodium sulphite.....3½ ounces  
Diogen ..... 7 drams  
Potassium carbonate.....4½ ounces  
Water ..... 9 ounces

Mix and dissolve.

For use, take 1 ounce to 4 ounces of water and add 4 drops of a 10 per cent solution of potassium bromide.

**Metacarboll Developer.**

Sodium sulphite.....100 grains  
Caustic soda..... 50 grains  
Metacarboll ..... 25 grains  
Water .....10 ounces

Dissolve and filter.

**Developing Powder.**

Pyrogallol ..... 1 dram  
Sodium bisulphite..... 4 drams  
Sodium carbonate..... 4 drams

Mix. Put up in oiled paper. For use, dissolve in 24 ounces of distilled water.

**Developing Powder.**

Eikonogen ..... 4 drams  
Sodium sulphite..... 1 ounce  
Potassium carbonate..... 5 drams

Mix, put up in oiled paper. For use, dissolve in 24 ounces of water.

**Developing Powder.**

Hydroquinone ..... 2 drams  
Sodium sulphite.....1½ ounces  
Potassium bromide..... 1 dram  
Sodium carbonate..... 3 ounces

Mix and dissolve in 24 ounces of water.

**Fixing Bath.**

Chrome alum solution (1½ per cent.) ..... 4 ounces  
Hypo solution (50 per cent.) ..... 4 ounces  
Sodium acetate.....1½ drams  
Mix and dissolve.

**Hardening Fixing Bath.**

## (Solution No. 1.)

Sodium hyposulphite..... 16 ounces  
Water ..... 48 ounces  
Mix.

## (Solution No. 2.)

Sulphuric acid..... 1 dram  
Water ..... 2 ounces  
Mix.

## (Solution No. 3.)

Chrome alum..... 1 ounce  
Water ..... 8 ounces  
Mix.

Add No. 2 to No. 1, and then add No. 3 to the mixture.

**Fixing Bath for Paper Negatives.**

## (Solution No. 1.)

Sodium sulphite..... 2 ounces  
Citric acid..... ½ ounce  
Water ..... 5 ounces

Mix.

## (Solution No. 2.)

Sodium hyposulphite..... 8 ounces  
Water ..... 35 ounces

Dissolve.

For use, mix the solutions.

**Hardening Bath.**

Formalin ..... 1 ounce  
Water .....15 to 25 ounces

Mix. Use from 5 to 20 minutes, according to dilution.

**Hardening Bath.**

Alum ..... 1 ounce  
Water ..... 30 ounces

Dissolve. Use from 10 to 20 minutes.

**Hardening Bath.**

Chrome alum..... 1 ounce  
Cold water..... 30 ounces

Dissolve. Use from 10 to 20 minutes.

**Clearing Solution.**

Alum ..... 1 ounce  
Citric acid..... 1 ounce  
Iron sulphate..... 3 ounces  
Water .....20 ounces

Make a solution.

Soak for a minute or two.

**Ferro-Prussiate, or Blue Photographic Paper.**

Prepare two solutions, one of ammonio-citrate (soluble citrate) of iron, 45 grains to the fluid ounce; the other of red prussiate (potassium ferricyanide), 75 grains to the fluid ounce. Preserve the two solutions separate until required for use; then mix equal volumes and float on the surface of the mixture sheets of paper having a very smooth surface. Care should be taken that the whole surface is wetted. Dry the sensitized paper in a dark place. The prints are made by exposing the sensitive paper under a drawing made on translucent paper in an ordinary photographer's printing apparatus to a strong light a sufficient length of time, 10 to 30 minutes, according to the strength of the light and the

transparency of the paper on which the drawing is made. Finally, fix the print by simply washing well with pure water. In a dry place the prepared paper may be kept for considerable time.

#### **Ferro-Prussiate, or Blue Photographic Paper.**

This process, somewhat more troublesome, gives blue lines on a white ground, instead of white lines on a blue ground, as in the ordinary blue print. The sensitive paper is prepared by treating with a solution prepared by mixing the three following solutions: 1. Ferric chloride,  $2\frac{1}{2}$  ounces; water, 5 ounces. 2. Acacia, 6 ounces; water, 28 ounces. 3. Ammonio-citrate of iron, 4 ounces; water, 10 ounces. This mixture must be used at once, as it spoils. The "printing" is done in the usual manner, but does not require as long exposure as the usual process. To develop the print, dip first in a saturated solution of potassium ferricyanide, transfer to a bath of pure water, and thence to a mixture of hydrochloric acid 1 part, water 12 parts. Finally, wash well with pure water.

#### **Toning Bath.**

Sodium phosphate.....	20 grains
Gold chloride.....	$1\frac{1}{2}$ grains
Distilled water.....	10 ounces

Mix and dissolve.

#### **Toning Bath.**

Sodium tungstate.....	40 grains
Gold chloride.....	2 grains
Water .....	12 ounces

Mix and dissolve.

#### **Toning Bath.**

Strong nitric acid.....	5 drops
Potassium chloro-platinite.	1 grain
Water .....	4 ounces

Mix.

#### **Toning Bath for Silver Bromide Paper.**

Sodium hyposulphite.....	20 drams
Sodium sulphite.....	4 drams
Sulphuric acid.....	1 dram
Distilled water.....	25 ounces

Mix and dissolve.

#### **Toning and Fixing Bath.**

Sodium hyposulphite.....	3 ounces
Distilled water.....	16 ounces

When dissolved, add

Gold chloride.....	4 grains
Distilled water.....	4 drams

Mix.

#### **Toning and Fixing Bath.**

Sodium hyposulphite.....	7 ounces
Ammonium sulphocyanide	1 ounce
Lead acetate.....	67 grains
Alum .....	1 ounce
Gold chloride.....	12 grains
Distilled water.....	35 ounces

Mix and dissolve.

#### **Photographic Varnish.**

Five parts of finely powdered sandarac are put into a vessel with 20 parts of absolute alcohol, and when the resin has been entirely dissolved by agitation, 2 parts of Venice turpentine are added. When this is dissolved,  $1\frac{1}{2}$  parts of oil of lavender or oil of turpentine and  $1\frac{1}{2}$  parts of powdered camphor are added, and when dissolved, filtered. If the varnish should not give the desired lustre, a further quantity ( $\frac{1}{2}$  to 1 part) of sandarac may be added.

#### **Varnish for Photographic Prints.**

Water .....	320 parts
White gum lac.....	32 parts
Borax .....	8 parts
Sodium carbonate.....	2 parts
Glycerin .....	2 parts

Dissolve the borax and the sodium carbonate in 160 parts of warm water, then add the gum lac in small pieces, and stir until complete solution. Now filter, and add the glycerin and 160 parts of water. After a few days a deposit is formed, which is separated either by decanting or filtering, and the varnish is ready for use. Apply with a short camel-hair brush, not too thickly, let dry spontaneously, the print in horizontal position.

#### **Varnish for Negatives.**

A light varnish for lacquering negatives may be made by digesting on a sand bath until dissolved, dammar, 1 part; mastic,  $\frac{1}{4}$  part; sandarac,  $\frac{1}{4}$  part; chloroform and varnish oil each 1 part. Filter the varnish through clean cotton, and keep it in well closed bottles. It dries very easily.

#### **Retouching Varnish for Photographers.**

Ether .....	100 cubic cent.
Shellac .....	1 gram
Sandarac .....	6 grams
Mastic .....	6 drams

Mix. When solution is effected the mixture is filtered, and 10 cubic centimeters benzole (not petroleum benzene) added. The varnish affords a dim layer when poured cold upon the plates; if the grain is not fine enough, a little more benzole is added.

#### **Varnish for Photographs.**

Pyroxylin .....	10 grains
Amyl alcohol.....	1 ounce
Amyl acetate.....	1 ounce

Allow to stand, shaking frequently. This varnish requires 12 hours to dry.

#### **Varnish for Photographs.**

Japanese gold size,  
Benzole, of each, equal parts.

Use cautiously. Apply with brush.

#### **Varnish for Negatives.**

Gum sandarac.....	1 ounce
Orange shellac.....	$\frac{1}{2}$ ounce
Castor oil.....	90 drops
Methyl alcohol.....	1 pint

Mix, dissolve and filter.

#### **Flash Paper.**

Carefully mix equal parts of nitric acid (1.42 sp. gr.) and sulphuric acid (1.84 sp. gr.). When the mixture has cooled to 70° F., immerse in it white Japanese tissue filtering paper cut into strips  $\frac{1}{4}$  inch wide and as long as desired. Cover the vessel with a glass plate and let it stand for 12 to 16 hours. Remove the paper, wash in clear water, and dry as usual for gun cotton. When used, roll up a strip into a pellet and light one corner of it, throwing it into the air as you do so.

#### **Flash Light Powder.**

A sort of capsule is made with 10 or 15 grains of gun cotton and in the interior of it is spread 7 grains of magnesium powder, well dried and passed through a sieve, or, for rapid exposures 15 grains of a mixture of 10 grains of dry magnesium and  $7\frac{1}{2}$  grains of each of chlorate and perchlorate of potassium. The capsule is then closed by joining the edges and, a clean copper wire being passed through it, it is suspended at the



proper place. It now suffices to touch the cotton with anything in incandescence, held at the end of a long stick, to obtain a flash light of great power.

In the manufacture of flash light powders great care should be exercised to prevent explosion. On no account should the ingredients be rubbed together or handled roughly.

#### Flash Light Powder.

Potassium chlorate.....	25 parts
Yellow potassium prussiate	3 parts
Sugar .....	2 parts
Aluminium, powdered.....	10 parts

Mix.

#### Flash Light Powder.

Potassium chlorate.....	24 parts
Potassium nitrate.....	5 parts
Antimony sulphide.....	4 parts
Aluminium, powdered.....	40 parts

Mix.

#### Flash Light Powder.

Potassium chlorate.....	20 parts
Aluminium, powdered.....	8 parts
Sugar .....	2 parts

Mix.

#### Flash Light Powder.

Magnesium, powdered....	40 parts
Potassium permanganate..	40 parts
Barium peroxide.....	20 parts

Mix.

#### Flash Light Powder.

Magnesium, powdered....	6 ounces
Potassium chlorate.....	12 ounces
Antimony sulphide.....	2 ounces

Mix them. Use from 75 to 150 grains of the mixture at a time.

#### Flash Light Powder.

Purchase 1 ounce magnesium, powdered, and 1 ounce of negative gun cotton from dealers in photographic material, place on a dust pan enough cotton, when pulled out, to measure  $3\frac{1}{2}$  inches in diameter. Sprinkle it over with 20 grains of magnesium, powdered to form a thin even film. Lay over the magnesium thus arranged a very thin layer of gun cotton. Connect to the bunch of cotton, a small fuse of twisted cotton about 6 inches long, so that it will extend to the side of the dust pan. Then set the pan on a step ladder near the object, and when ready, light the gun cotton fuse with a match, when instantly a brilliant flash will ensue.

#### Flash Light Powder.

Fifteen grains of gun cotton and 30 grains of magnesium, powdered, are used.

#### Flash Light Powder.

Lithium carbonate.....	1 ounce
Calcium carbonate.....	1 ounce
Magnesium, powdered.....	20 ounces

Mix.

#### Flash Light Powder.

Magnesium .....	1 ounce
Ammonium nitrate.....	25 grains
Strontium oxalate.....	50 grains
Sodium oxalate.....	50 grains

Mix.

#### Flash Light Cartridges.

Pure magnesium, (powdered)	2 parts
Powdered potassium nitrate	1 part

Mix with a little trituration. To prepare the cartridges, use No. 29 pill-boxes for 15 grains of the powder and No. 30 boxes or 30 grains, these to be sold two for 5 cents and

5 cents each, respectively. Saltpetre paper should be cut in strips one-eighth of an inch wide by 2 inches long, one end of each strip rolled in a small tuft of cotton, by which it should be glued to the bottom of the box. The glue should be allowed to set; then fill with the proper amount of the compound and place the box-cover on, allowing the free end of the fuse (saltpetre paper) to pass outside, between the box and its cover. Be careful to warn new users that the cover is to be removed before lighting.

#### Duration of Combustion of Magnesium Flash Lights.

One gram (15.43 grains) compounded as follows, burns in 1-25th of a second and its graphic power compared to that of the decimal wax candle is 900,000:

Magnesium, powdered....	1
Potassium chlorate.....	7.5
Potassium perchlorate....	7.5

One gram of the following mixture burns in 1-20th of a second:

Potassium chlorate.....	6
Magnesium dust.....	37
Antimony sulphide.....	1

One gram of the mixture given below burns in 1-5th of a second:

Magnesium dust.....	37
Potassium chlorate.....	63

#### Photographs on Watch Dials.

For the production of photographic pictures on watch dials, the following method of procedure is recommended:

Beat the white of an egg, with addition of a little ammonia water, to a white foam; add 300 cc. of water and beat again. After the egg has settled, filter and let the liquid run over the dial, which has previously been thoroughly cleaned with ammonia water. After the surplus has run off, coat once more and allow to dry. Then sensitive collodion is now produced as follows: Dissolve 0.6 gram zinc chloride in 20 cc. of alcohol; add 0.5 gram collodion cotton and 26 cc. of ether, and shake the whole forcibly. Then dissolve 1.5 grams of silver nitrate in hot water, add 6 cc. of alcohol, and keep the whole in solution by heating. The silver solution is now added in small quantities at a time to the collodion, which must have well settled. This, of course, is done in the dark room.

After 24 hours the emulsion is filtered by passing it through cotton moistened with alcohol. This durable collodion emulsion is now flowed in the usual way thinly upon the prepared watch dial, which, after the collodion has coagulated, is moved up and down in distilled water until the fatty stripes have disappeared. The water is then changed once, and the dial is, after a short immersion, left to dry upon blotting paper. It is now ready for exposure. Expose under the original magnesium light and develop with a citrate-oxalate developer, or in the following hydroquinone developer:

Hydroquinone .....	4 grams
Potassium bromide.....	25 grams
Sodium sulphite.....	48 grams
Sodium carbonate.....	10 grams
Water .....	450 cc.

After fixing and drying, coat with transparent positive varnish.

In place of the developing process, the printing out process with silver chloride collodion can also be applied, with the advantage that the pictures can be toned. The collodion for this process is made in the following way:

Dissolve 8 grams collodion cotton in 100 cc. of ether and 100 cc. of alcohol; add 0.3 gram of strontium chloride, and then 0.2 gram of

lithium chloride, which has previously been dissolved in 2 cc. of hot water. To this solution add also 1 gram citric acid which has been dissolved in alcohol slightly heated. The solution is left standing for 24 hours, and is then filtered through cotton. The prepared dial is then coated in the ordinary way with this emulsion, and printed, after which it is toned as usual.

#### Photographs on Fruit.

As is well known, the ripening of fruit is really due to a sort of light-sensitiveness, and this is taken advantage of in the following process for producing pictures on growing fruit. For the production of simple forms, such as initials or monograms, a leaf is taken, and the letters cut out with a knife; the leaf is then pasted on to the apple (still growing, of course), and left for a week or so. This produces a red image on a green ground. To print photographs the apple is first of all encased in black paper for a week or two, so as to render the surface more sensitive; the negative, on a film, is then pasted on with white of egg, this being the only adhesive that will not show in the "print". The black paper bag is then replaced, but a hole is cut in it, opposite the film and a little larger, thus producing a sort of vignette. A week is allowed for printing.

#### Paste for Mounting Photographic Prints.

Nelson's photographic gelatin	4 parts
Glycerin	1 part
Alcohol	5 parts
Water	16 parts

Dissolve the gelatin in the water, add the glycerin, and finally the alcohol.

#### Paste for Mounting Photographic Prints.

Arrowroot	10 parts
Gelatin	1 part
Alcohol	10 parts
Water	100 parts

Make the arrowroot into a paste with a portion of the water, and soak the gelatin in the balance until soft. Mix the two and bring to a boil and boil for five minutes. On cooling, add the alcohol and sufficient carbolic acid to prevent decomposition.

#### Paste for Mounting Photographic Prints.

White dextrin	2 ounces
Alcohol	1 ounce
Boiling water	6 ounces

Dissolve the dextrin in the water, and when nearly cold add the alcohol.

In mounting by the "dry method" paper or a part of the mount is previously varnished and the print having been put in place, is subjected to heat in a press; this softens the resin in the varnish and makes perfect contact between the print and the mount. The resinified paper is made by brushing fine tissue paper with a solution of white shellac 30 grams, gum elemi, 3 grams, Canada balsam 5 grams in alcohol 100 cc.

#### Photographer's Photo-Mountant.

Wheat flour	½ pound
Alum	1 dram
Boric acid	1 dram
Water	½ pint

Make a smooth paste and add  
Acetic acid..... 1 fl. ounce  
Water..... 1 pint

Mix and heat with constant stirring until nearly gelatinous. If too stiff, add more water. When nearly cool add

Oil of cloves..... 20 drops

## PYROTECHNICS.

### Pyrotechnics.

The compounding of fireworks is full of danger, a fact which should always be borne in mind by those handling them. The ingredients should be powdered separately and the mixing done with a wooden or bone spatula, on paper; or it may be done by sifting through a coarse sieve or mosquito netting; at all events the use of the mortar and pestle is extremely dangerous, and should never be resorted to in mixing the prepared constituents.

### Bengal Lights.

Realgar	1 part
Black antimony	5 parts
Red lead	1 part
Sulphur	3 parts
Nitre	14 parts

Mix.

### Bengal Light Balls.

Collodion	100 parts
Magnesium dust	1 to 10 parts
Barium chloride, or	
Strontium nitrate	3 parts

Mix the ingredients and after evaporation of the ether by exposure to air the residue may be pressed into balls for pyrotechnic use.

### Rockets.

Sulphur	1 part
Carbon, wood	2 parts
Nitre	4 parts
Meal powder	1 part

Meal powder is a fine black or brown dust, which acts as a diluent.

### Roman Candles.

Sulphur	4 parts
Carbon	3 parts
Nitre	8 parts

Color as desired, according to directions under "Colored Flames."

### Pin Wheels.

Sulphur	5 parts
Nitre	9 parts
Meal powder	15 parts

Color as desired.

### Colored Fires.

Sulfonal added to the preparations usually employed contributes wonderfully to their brilliancy. Mixed in equal parts with potassium chlorate an intensely brilliant white light may be obtained; 8 parts of this mixture with 1 part lithium carbonate gives a beautiful lilac.

### Colored Flames.

The following salts, finely powdered, burnt in an iron ladle with a little alcohol, will communicate the colors to the flame:

Potassium nitrate	yellow
Sodium chlorate	yellow
Potassium chlorate	violet
Calcium chloride	orange
Strontium nitrate	red
Barium nitrate	green
Copper nitrate	green
Borax	green
Lithium chloride	purple

### Blue Fire.

Sulphur	1 ounce
Potassium sulphate	1 ounce
Ammonio-cupric sulphate	1 ounce
Potassium nitrate	2 parts
Potassium chlorate	2 parts

Mix.

## COLORED FIRES FOR TABLEAU LIGHTS, THEATRICALS, ETC.

Compiled Expressly for the Era Formulary. (All Quantities in Parts by Weight.)

The figures at the top of each column represent the number of kinds of colored fires contained in the tables. Having selected one, read the quantities given in that column downward; the name of the ingredient being found upon the same line at the left of the table. For example, No. 5 in the table for violet fires is selected. Reading this column downward, we have 51 ounces (or parts by weight) of chlorate potash, 10 ounces calcium carbonate, 15 ounces sulphur and 24 ounces carbonate of copper. These are the ingredients and quantities to be used in preparing the violet fire No. 5. The other tables are read in the same way.

Violet.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Chlorate potash .....	30	50	40	52	51	15	9	6	6	15	52	52	52	51	51	51	51	51	...	...	...	...	...	...	...
Saltpetre .....	...	20	30	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Strontium nitrate .....	20	10	20	...	...	...	4	...	...	14	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Calcium carbonate .....	...	...	29	10	...	...	...	...	2	...	28	24	21	16	13	10	8	6	...	...	...	...	...	...	...
Carbonate potash .....	...	10	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sulphide copper .....	...	20	4	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Calomel .....	2	...	8	...	...	...	...	...	...	14	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sulphur .....	20	15	12	15	15	4	5	2	2	15	15	15	15	15	15	15	15	15	...	...	...	...	...	...	...
Charcoal .....	5	4	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Carbonate copper .....	...	...	...	24	...	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ammonio-copper nitrate .....	15	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Alum powdered .....	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Malachite powdered .....	...	...	...	...	...	...	...	2	2	5	9	13	18	21	24	26	28	...	...	...	...	...	...	...	...
Shellac .....	...	...	...	...	...	...	...	...	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

Red.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Chlorate potash .....	24	32	20	40	15	10	...	...	27	20	15	12	9	...	15	...	8	3	1	...	13	1	4	16	4
Strontium nitrate .....	30	48	20	39	60	68	4	1	51	58	63	65	68	10	...	5	16	12	3	13	...	3	8	24	20
Sulphur .....	18	18	20	18	21	22	...	...	20	20	21	22	22	2	4	...	...	...	...	1	...	...	...	...	5
Saltpetre .....	8	...	10	...	...	...	...	12	...	...	...	...	...	2	...	...	...	...	...	4	...	...	...	...	...
Black sulphide of antimony .....	8	6	6	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	2
Charcoal .....	4	2	1	3	1½	¾	...	...	2	2	1	1	1	...	1	...	¾	...	...	...	...	...	...	1	1
Sugar .....	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Shellac .....	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	4	1	1	...	1	3	...	...	...
Lycopodium .....	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	½	...	...	...	...	1	...	¾	...	...
Milk sugar .....	...	...	...	...	...	...	...	4	...	...	...	...	...	...	...	...	...	...	...	4	...	...	...	...	...
Strontium carbonate .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	16	...	...	...	...	...	...	...	...	...	...
Gunpowder .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...
Strontium oxalate .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...
Stearine .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	...

Green.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Chlorate potash .....	4	73	...	1	2	4	1	18	1¼	20	36	24	14	10	8	8	...	4	60	4	...	...	...	...	...
Sulphur .....	6	17	...	2½	...	...	...	22	1½	...	24	23	22	21	21	13	6	6	16	5	...	...	...	...	...
Barium nitrate .....	18	...	5	...	7	9	3	60	20	10	40	53	64	69	71	77	80	18	...	14	...	...	...	...	...
Lampblack .....	1	...	...	...	...	...	...	...	20	10	40	53	64	69	71	77	80	18	...	14	...	...	...	...	...
Boric acid .....	...	10	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Shellac .....	...	...	1	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sugar of milk .....	...	...	...	...	2	...	...	...	10	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Charcoal .....	...	...	...	...	...	...	...	½	...	...	...	...	...	...	3	2	1	...	...	...	...	...	...	...	...
Black sulphide of antimony .....	...	...	...	...	...	...	...	½	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...
Barium carbonate .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	24	...	...	...	...	...	...	...	...

Blue.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Yellow.					White.				
Chlorate potash .....	50	25	30	..	1	1	..	28	6	40	61	68	..	9	4	12	16	..	1	..	..	12	..	..	
Saltpetre .....	..	50	40	5	..	..	6	27	..	..	..	..	2	..	..	..	11	..	..	..	18	23	76	4	
Ammonio-copper sulphate.....	25	..	..	..	3	1	..	15	8	28	..	..	..	..	5	..	..	..	..	..	..	..	..	..	
Ammonio-copper nitrate.....	..	..	20	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Carbonate copper.....	..	12	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Sulphur .....	12	16	12	2	..	..	2	15	..	..	16	24	3	1	..	6	..	20	..	10	..	..	..	..	
Charcoal .....	16	12	16	..	..	..	..	..	..	..	..	..	..	..	..	..	7	..	..	..	2	..	..	..	
Burnt alum.....	..	..	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Antimony metallic.....	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Ground shellac.....	..	..	..	..	1	1	..	..	1	..	..	..	..	2	..	10	..	4	1	..	..	..	..	..	
Black sulphide antimony.....	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	3	..	..	..	..	
Sulphate potash.....	..	..	..	..	..	..	15	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Dextrine .....	..	..	..	..	..	..	..	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Stearine .....	..	..	..	..	..	..	..	3	..	..	10	..	..	..	..	..	..	..	..	..	..	..	1	..	
Calcined alum.....	..	..	..	..	..	..	..	..	..	23	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Sulphate copper.....	..	..	..	..	..	..	..	..	..	..	15	..	..	..	..	..	..	..	..	..	..	..	..	..	
Zinc fillings.....	..	..	..	..	..	..	..	..	..	..	..	3	..	..	..	..	..	..	..	..	9	..	..	..	
Gunpowder .....	..	..	..	..	..	..	..	..	..	..	..	4	..	..	..	..	..	..	..	..	6	..	..	..	
Sodium bicarbonate.....	..	..	..	..	..	..	..	..	..	..	2	..	3	..	..	..	..	..	..	..	12	22	..	..	
Strontium sulphate.....	..	..	..	..	..	..	..	..	..	..	..	..	..	3	..	..	..	..	..	..	..	..	..	..	
Sodium oxalate.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	9	..	..	..	..	..	..	..	..	..	
Sodium nitrate.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	3	..	..	..	..	..	
Quicklime, powdered.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	..	..	..	..	
Sugar of milk.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	..	..	
Barium carbonate.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	



**Blue Fire.**

Potassium chlorate.....	8 ounces
Calomel .....	4 ounces
Copper sulphate.....	5 ounces
Shellac .....	3 ounces

Mix.

**Blue Fire.**

Potassium chlorate.....	1 ounce
Copper chlorate.....	2 ounces
Alcohol .....	2 ounces
Water .....	1 ounce

Mix.

**Green Fire.**

Barium chlorate.....	2 ounces
Alcohol .....	2 ounces
Water .....	5 ounces

Mix.

**Green Fire.**

Barium nitrate.....	1 ounce
Potassium chlorate.....	1 ounce
Alcohol .....	2 ounces
Water .....	5 ounces

Mix.

**Green Fire.**

Shellac .....	5 ounces
Barium nitrate.....	1½ ounces
Barium chlorate.....	2 drams

Mix.

**Red Fire.**

Shellac .....	5 ounces
Strontium nitrate.....	1 ounce

In damp weather add:

Potassium chlorate.....	1 dram
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Mix.

**Red Fire.**

Strontium nitrate.....	2 ounces
Potassium chlorate.....	1 ounce
Alcohol .....	2 ounces
Water .....	5 ounces

Mix.

**Yellow Fire.**

Sulphur .....	1 ounce
Sodium carbonate, dried...1½	ounces
Potassium chlorate.....	4 ounces

Mix.

**Yellow Fire.**

Sodium chlorate.....	2 ounces
Potassium oxalate.....	1 ounce
Alcohol .....	2 ounces
Water .....	5 ounces

Mix.

**Violet Fire.**

Burn a powder composed of 8 parts metallic magnesium, 16 parts potassium permanganate, and 10 parts potassium dichromate.

**Violet Fire.**

Strontium chlorate.....	1 ounce
Copper chlorate.....	1 ounce
Potassium chlorate.....	1 ounce
Alcohol .....	4 ounces
Water .....	6 ounces

Mix.

**Violet Fire.**

Potassium chlorate.....	2 ounces
Strontium chlorate.....	2 ounces
Copper chlorate.....	1 ounce
Alcohol .....	2½ ounces
Water .....	5 ounces

Mix.

**Lilac Fire.**

Potassium chlorate.....	2 ounces
Copper chlorate.....	1 ounce
Strontium chloride.....	1 ounce
Alcohol .....	2½ ounces
Water .....	5 ounces

Mix.

**Mauve Fire.**

Potassium chlorate.....	3½ ounces
Calomel .....	1½ ounces
Shellac .....	½ ounce
Strontium nitrate.....	½ ounce
Cupric sulphate.....	¼ ounce
Fat .....	⅛ ounce

Mix.

**Purple Fire.**

Copper sulphide.....	1 ounce
Calomel .....	1 ounce
Sulphur .....	¼ ounce
Potassium chlorate.....	2 ounces

Mix.

**White Fire.**

Gunpowder .....	1 ounce
Sulphur .....	1½ ounces
Potassium nitrate.....	4 ounces

Mix.

**White Fire.**

Potassium nitrate.....	4 ounces
Sulphur .....	2 ounces
Black antimony.....	1 ounce
Flour .....	1 ounce
Powdered camphor.....	½ ounce

Mix.

**Fuses for Fireworks.**

Potassium nitrate.....	2 drams
Lead acetate.....	5 ounces
Water .....	12 ounces

Dissolve on a water bath. Put in the solution strips of unsized paper by woollen strings; continue the heat for some time, take the strips out and dry. The longer the heat, the faster the fuse will burn.

**PREPARATIONS, LEATHER.****Blackening for Boots and Shoes.**

Four ounces ivory black, 3 ounces coarse sugar, a tablespoonful of sweet oil, and 1 pint of weak beer, and mix them gradually together until cold.

**Blackening, Acid Free.**

To a solution of casein in soda add ivory black, glucose, olive oil, and oleate of iron. A little soluble blue or Prussian blue dissolved with oxalic acid improves the color.

**Blackening for Boots and Shoes.**

Take of ivory black (in very fine powdery 2 pounds; molasses, 1½ pounds; sperm oil, ¼ pint; mix as before; then add of gum arabic, 1 ounce, dissolved in strong vinegar, ½ pint; mix well; the next day further add of good vinegar, or strong sour beer, 3 to 4 pints (or q. s.); stir briskly for a quarter of an hour, and again once a day for a week.

**Bailey's Blackening Balls.**

Bruised gum tragacanth..	1 ounce
Water .....	4 ounces

Mix and add:

Neatsfoot oil.....	2 ounces
Fine ivory black.....	2 ounces
Prussian blue.....	3 ounces
Sugar candy.....	4 ounces

Mix and evaporate to proper consistence.

**Oil Paste Shoe Blackening.**

Molasses .....	1 pound
Ivory black .....	1¼ pounds
Sweet oil.....	2 ounces

Rub together in a mortar till all the ingredients form a perfectly smooth homoge-

neous mixture, then add a little lemon juice or strong vinegar, say the juice of one lemon, or about a wineglass of strong vinegar, and thoroughly incorporate with just enough water added slowly to obtain the required consistency.

#### Blacking, Acid Free.

Lampblack .....	1 pound
Bone black.....	2 ounces
Syrup .....	2 pints
Boric acid.....	½ ounce

Mix well.

#### Blacking for Shoes.

Castile soap.....	2 pounds
Potassium carbonate.....	1 pound
Beeswax .....	8 pounds
Water .....	16 pints

Boil together until a homogeneous paste is obtained, then add:

Sugar, powdered.....	2½ pounds
Gum arabic, powdered....	1 pound
Ivory black.....	16 pounds

Mix and stir until homogeneous. This is a good, reliable blacking that will keep indefinitely.

#### Blacking for Shoes.

Bone black.....	4 ounces
Olive oil.....	1 ounce
Syrup .....	12 ounces
Sulphuric acid.....	1 ounce

Mix well together, adding the acid last.

#### Blacking for Shoes.

Bone black.....	1 pound
Gum arabic, powdered....	¼ pound
Grape sugar.....	¼ pound
Water .....	2 pints

Mix well.

#### Blacking for Shoes.

Ivory black.....	1 pound
Sugar .....	12 ounces
Olive oil.....	2 ounces
Diluted acetic acid.....	4 pints

Mix, and if too thin, evaporate to the proper consistency.

#### Liquid Blacking.

Treacle .....	4 ounces
Ivory black.....	4 ounces
Rape oil.....	1 ounce
Wood vinegar.....	24 ounces
Sulphuric acid.....	5 drams

Mix well together, adding the acid last.

#### Liquid Blacking.

Treacle .....	4 ounces
Ivory black.....	4 ounces
Olive oil.....	½ ounce
Gum arabic, powdered....	1 dram
Iron sulphate, powdered..	1 dram
Small beer.....	1½ pints
Sulphuric acid.....	½ ounce

Mix as above.

#### Liquid Blacking.

Treacle .....	8 ounces
Ivory black.....	8 ounces
Rape oil.....	1 ounce
Gum arabic, powdered....	½ ounce
Distilled vinegar.....	24 ounces
Water .....	24 ounces
Sulphuric acid.....	1 ounce

Mix all the ingredients except the acid and the vinegar, which add last.

#### Liquid Blacking.

Ivory black.....	4 ounces
Linseed oil.....	4½ pounds
Treacle .....	4 ounces
Copperas .....	4½ drams
Sulphuric acid.....	9½ drams
Vinegar, quantity sufficient.	

Mix well and add enough vinegar to obtain the proper consistency.

#### Liquid Shoe Polish.

Aniline black.....	1 ounce
Camphor .....	2 ounces
Shellac .....	25 ounces
Wood alcohol.....	73 ounces

Mix and dissolve.

#### Liquid Shoe Polish.

Alcohol .....	1 gallon
White turpentine.....	1½ pounds
Shellac .....	4 pounds
Venice turpentine.....	4 ounces
Sweet oil.....	4 ounces
Lampblack .....	2 ounces

Mix.

#### Liquid Shoe Polish.

Logwood extract, 3 ounces, dissolve in 2 quarts of water; borax, 3 ounces, dissolve in 2 quarts of water; and add ¾ ounce shellac, boil to dissolve; potassium dichromate ¼ ounce, dissolve in soft water, ¼ pint, and add 3 ounces ammonia water. Mix all together.

#### Liquid Shoe Polish.

Caoutchouc .....	100 parts
Petroleum .....	100 parts
Carbon disulphide.....	100 parts
Shellac .....	400 parts
Lampblack .....	200 parts
Oil of lavender.....	10 parts
Alcohol .....	2,000 parts

Upon the caoutchouc in a bottle pour the carbon disulphide, cork well and let it stand a few days, or until the caoutchouc has become thoroughly gelatinized or partly dissolved. Then add the petroleum, oil of lavender and alcohol, next the shellac in fine powder, and heat it to about 50° C. (122° F.) taking care that as little as possible is lost by evaporation. When the substances are all dissolved and the liquid is tolerably clear, add the lampblack, mix thoroughly and fill at once into small bottles.

#### Liquid Blacking.

Ivory black.....	1 pound
Brown sugar.....	12 ounces
Olive oil.....	2 ounces
Diluted acetic acid.....	4 pints

Rub the black, sugar and oil together and gradually stir in the acid.

#### Liquid Blacking.

Ivory black.....	2 pounds
Molasses .....	2 pounds
Sulphuric acid.....	4 ounces
Boiling water.....	7 pints

Mix the black with the molasses and gradually add the water, finally the acid.

#### Dressing for Brown Leather Shoes.

Yellow wax.....	4 ounces
Pearlash .....	½ ounce
Yellow soap .....	¼ ounce
Water .....	12 ounces

Scrape the wax small, and boil with these ingredients until a perfectly uniform cream

is obtained; then remove from the fire and add:

Turpentine .....	8 ounces
Phosphine (aniline) dissolved in $\frac{1}{2}$ ounce alcohol .....	4 grains

Shake until thoroughly combined, and make up to 24 ounces with water.

#### Russet Leather Shoe Dressing.

Oil of turpentine.....	20 parts
Yellow wax.....	9 parts
Soap (ordinary bar).....	1 part
Boiling water.....	20 parts

Dissolve the wax in the turpentine by the aid of a water bath and the soap in the hot water. Mix in a hot mortar and agitate until cold.

#### Russet Leather Shoe Dressing.

Palm oil.....	16 parts
Common soap.....	48 parts
Oleic acid.....	32 parts
Glycerin .....	10 parts
Tannic acid.....	1 part

Melt the soap and palm oil together with a very gentle heat. When the soap is dissolved add the oleic acid. Dissolve the tannin in the glycerin, add to the hot mixture and stir until cold.

#### Russet Leather Shoe Dressing.

Annatto .....	$\frac{1}{2}$ ounce
Catechu .....	1 ounce
Gamboge .....	$\frac{1}{2}$ ounce
Acacia .....	$\frac{1}{2}$ ounce
Hydrochloric acid.....	1 ounce
Water, enough to make.....	40 ounces

Rub up the annatto and gamboge with the whole of the acid and a portion of the water, and add this to the remainder of the water previously mixed with the catechu and the gum acacia.

#### Dressing for Tan Shoes.

Beeswax .....	1 part
Oil of turpentine.....	4 parts

Mix on a water bath.

#### Brown Boot Top Liquid.

Catechu .....	1 ounce
Gamboge .....	$\frac{1}{2}$ ounce
Acacia .....	3 drams
Annatto .....	$\frac{1}{2}$ ounce
Hydrochloric acid.....	1 ounce
Water .....	2 pints

Mix.

#### Brown Boot Top Liquid.

Alum, annatto and oxalic acid, of each 1 ounce; isinglass and sugar of lead, of each  $\frac{1}{2}$  ounce; salt of sorrel,  $\frac{1}{4}$  ounce; water, 1 quart; boil together for 10 minutes.

#### Russet Shoe Dressing.

Water .....	16 pints
Rosin oil.....	4 pints
Ammonium chloride.....	4 ounces
Soap, yellow.....	2 pounds
Glue .....	1 pound
Sugar .....	8 ounces
Bismarck brown.....	1 ounce

Boil all except the brown pigment. After solution add the Bismarck brown. Apply with a sponge.

#### Dressing for Brown Shoes.

Yellow beeswax.....	2 ounces
Linseed oil.....	3 ounces
Turpentine .....	10 ounces
Soap shavings.....	$1\frac{1}{2}$ ounces
Hot water.....	1 pint

Mix the wax, oil, and turpentine on a water bath; dissolve the soap in the water. Mix the solutions and stir.

#### Dressing for Tan Shoes.

Yellow wax.....	1 pound
Palm oil.....	1 pound
Oil of turpentine.....	3 pounds

Mix on water bath.

#### Dressing for Russet Shoes.

Yellow wax.....	1 pound
Oil of turpentine.....	2 pints
Soap .....	2 ounces
Boiling water.....	2 pints

Dissolve the wax in the turpentine and the soap in the water. Mix and stir till mixed homogeneously.

#### Dressing for Russet Shoes.

Soft soap.....	1 ounce
Linseed oil.....	2 ounces
Annatto solution (1:20) in oil.....	7 ounces
Yellow wax.....	2 ounces
Oil of turpentine.....	7 ounces
Water .....	7 ounces

Dissolve the soap in the water and add the solution of annatto; melt the wax in the turpentine and gradually stir in the soap solution. Stir till cold.

#### Brown Dressing for Shoes, etc.

Oxalic acid.....	1 ounce
Alum .....	1 ounce
Annatto .....	1 ounce
Isinglass .....	$\frac{1}{2}$ ounce
Sugar of lead.....	$\frac{1}{2}$ ounce
Water .....	1 quart

Boil together for 10 minutes. Apply with a sponge.

#### Brown Dressing for Shoes.

Yellow wax.....	3 pounds
Soap shavings.....	1 pound
Aniline yellow.....	4 ounces
Oil of turpentine.....	10 pints
Alcohol .....	1 pint
Water .....	10 pints

Melt the wax in the turpentine, the soap in the water, the aniline in the alcohol. Mix the solutions while hot, and stir till cold.

#### Dressing for Black Patent Leather Shoes.

Gum .....	8 ounces
Treacle .....	2 ounces
Ink .....	1 pint
Vinegar .....	1 ounce
Sweet oil.....	1 ounce
Alcohol .....	2 ounces
Lampblack .....	$\frac{1}{4}$ ounce

Mix intimately.

#### Polish for Dress Boots.

Yellow soap.....	$\frac{1}{2}$ ounce
Yellow wax.....	$\frac{1}{2}$ ounce
Boiling water.....	10 ounces
Oil of turpentine.....	10 ounces

Melt the wax in the turpentine, dissolve the soap in the water. Mix in a hot mortar and stir till cold. By adding 1 ounce of extract of logwood brown, dissolved in the water, a good polish for brown leather boots results.

#### Patent Leather Dressing.

Prussian blue.....	1 pound
Vegetable black.....	4 ounces
Raw linseed oil.....	10 pints

Boil together and add turpentine to produce the desired consistency.



**Patent Leather Dressing.**

Wax .....	1 pound
Olive oil.....	3 pounds
Oil of turpentine.....	1½ pounds

Melt the wax in the olive oil and when nearly cool, add the turpentine.

**Patent Leather Reviver.**

Molasses .....	½ pound
Gum arabic, powdered....	1 ounce
Ivory black.....	2 pounds
Linseed oil.....	2 pints

Mix and boil together.

**Patent Leather Reviver.**

Yellow wax.....	3 ounces
Spermaceti .....	1 ounce
Oil of turpentine.....	11 ounces
Asphaltum varnish.....	1 ounce
Borax .....	80 grains
Ivory black.....	1 ounce
Prussian blue.....	½ ounce

Mix, melt all together and stir till cool.

**Patent Leather Preserver.**

Carnauba wax.....	1 pound
Oil of turpentine.....	10 pounds
Aniline black (fat soluble)	1 ounce

Melt the wax and turpentine and stir in the black.

**Blacking for Kid Shoes.**

Gum shellac, 2 ounces; ammonia water, 1 ounce; water, 8 ounces; black aniline, enough to color. Heat the ingredients slowly together (except the aniline) until the whole is nearly boiling and the shellac dissolves. It may be necessary to add a little more ammonia water during the boiling. Then add the aniline and water (enough to make the whole measure 16 ounces).

**To Make Kid Leather Soft.**

Wax .....	30 parts
Asphaltum .....	10 parts
Linseed oil.....	100 parts
Oil of turpentine.....	50 parts
Olive oil.....	100 parts

The wax and asphaltum are dissolved in the oil of turpentine with the aid of heat. The linseed oil and olive oil are mixed, heated and added to the solution, and the mixture made homogeneous by stirring.

**Kid Reviver.**

Yolk of 1 egg, 1 ounce of castor oil, 1 dram of turpentine, 2 drams of gum arabic, 3 ounces writing ink.

Mix in a mortar the yolk, castor oil and turpentine, then add the ink and finally the gum.

**Kid Reviver.**

Clear solution of chlorinated lime.....	1 ounce
Hydrochloric acid.....	1 dram
Castile soap, scraped.....	1½ ounces
Water .....	2 ounces

Dissolve the soap in the water and stir in the other ingredients previously mixed. Apply with flannel rag.

**Black Cream for Kid Leather.**

Lard .....	1 pound
Petrolatum .....	3 ounces
Glycerin .....	1½ ounces
Castor oil.....	1½ ounces
Lampblack .....	2 ounces

Mix.

**Colored Cream for Kid Leather.**

Lard .....	10 ounces
Castor oil.....	2 ounces
Yellow wax.....	2½ ounces
Petrolatum .....	3 ounces

Mix, melt together and dye with fat-soluble aniline dye of the desired shade (1 dram to 1 pound).

**White Cream for Kid Leather.**

Lard .....	3 ounces
Glycerin .....	1 ounce
Oil of mirbane.....	10 drops

Beat together in a mortar till mixed.

**Waterproof Paste for Boots and Shoes.**

Melt in an earthenware pot 6 parts spermaceti, add 12 parts of caoutchouc cut up very fine, and when this is dissolved, further add 12 parts of tallow, 4 parts of lard, 8 parts of amber varnish. Mix, and it is ready for use; apply with a brush. It gives a good gloss.

**Waterproof Shoe Soles.**

To render shoe soles waterproof, prepare a 5 to 10 per cent solution of gelatin, and mix this with 10 per cent of saturated solution of potassium dichromate. This must be done with exclusion of light. Shoe soles painted with this solution and exposed to light will prove impenetrable to water.

**Waterproof India Rubber Varnish for Boots**

Caoutchouc .....	½ ounce
Mineral naphtha. ....	2 ounces

Dissolve.

Asphaltum .....	½ ounce
Oil of turpentine.....	1 ounce

Dissolve.

Mix the solutions.

**Waterproof Varnish for Boots.**

Ozokerite (hard paraffin)..	1 part
Castor oil.....	2 parts
Lampblack .....	1 part

Mix.

**Waterproof Varnish for Boots.**

Salad oil.....	1 pint
Mutton suet.....	4 ounces
White wax.....	1 ounce
Spermaceti .....	1 ounce

Melt together and apply to the boots, which should be warmed.

**Waterproof Varnish for Boots.**

Spermaceti .....	3 ounces
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Melt and add India rubber in thin shavings, ¾ ounce; when dissolved add tallow, 8 ounces; lard, 2 ounces; amber varnish, 4 ounces. Mix well, and while still warm apply with a brush.

**Waterproofing Leather.**

White soap.....	6 ounces
Boiling water.....	16 ounces

Dissolve and stir in—

Zinc sulphate.....	6 ounces
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Stir until homogeneous zinc soap results. To this soap add 24 ounces of linseed oil. Mix and boil. Put the leather into the boiling mixture, and let it remain till saturated.

**Waterproofing Leather.**

Caoutchouc .....	1 pound
Oil of turpentine.....	16 pints

Mix and dissolve at a gentle heat. Treat the leather with this solution until saturated.

**Hardening Soles of Shoes.**

Stockholm tar rubbed on the soles of shoes hardens the leather materially, renders it

impervious to water, and makes it wear much longer than leather not thus treated.

#### Hardening Soles of Shoes.

If a pair of new shoes has the soles made warm by holding them near a fire or stove, and then varnishing them with copal varnish, drying them, warming, and applying a second or third coat, the leather will become waterproof, and very hard, lasting about twice as long as if not thus treated.

#### Toughening Leather.

Gutta-percha ..... 1 ounce  
Benzine ..... 16 ounces  
Linseed oil..... 10 ounces  
Dissolve. Treat the leather with this solution till saturated.

#### Toughening Leather.

Gutta-percha ..... 1 ounce  
Benzine ..... 16 ounces  
Linseed oil..... 16 ounces  
Wax ..... 4 ounces  
Rosin ..... 1 ounce  
Mix, melt together and proceed as directed in the preceding.

#### Boot Polish.

Asphaltum ..... 2½ pounds  
Spirit turpentine..... 8 ounces  
Double gold size..... 3 ounces  
Solution of India rubber. ¼ ounce  
Boiled linseed oil..... 3 ounces  
Vegetable black..... 1 dram  
Mix and simmer together until dissolved.

#### Boot Polish.

Boot polish is another name for dressing and polishing liquids. A wide range of formulas may be found under these headings.

#### White Boot Top Liquid.

Oxalic acid and zinc sulphate, of each 1 ounce; water, 1½ pints; dissolve. The liquid is applied with a sponge, the leather having been previously washed with water; after a short time it is washed off with water. when the boot tops are either dried in a current of air or by a gentle heat; they are lastly either polished with a brush, so as to appear like new leather, or they are left rough, as the case may require.

#### White Boot Top Liquid.

Sour milk, 1 quart; butter of antimony, cream of tartar, tartaric acid and burnt alum, of each 2 ounces; mix.

#### White Boot Top Liquid.

Sour milk (skimmed), 3 pints; cream of tartar, 2 ounces; alum and oxalic acid, of each, 1 ounce.

#### White Boot Top Liquid.

Alum, cream of tartar, magnesia and oxalic acid, of each 1 ounce; salt of sorrel and sugar of lead, of each ¼ ounce; water, 1 quart.

#### Ladies' Shoe Dressing.

Glue, fine..... 4 ounces  
Indigo, powdered..... 2 drams  
Logwood chips..... 8 ounces  
Vinegar ..... 32 ounces  
Soft water..... 16 ounces  
Glycerin ..... 4 ounces  
Tragacanth ..... 4 drams  
Potassium dichromate.... 4 drams

Mix and boil together all of the ingredients, except the potassium dichromate; then dissolve this salt in water and add to the strained decoction.

#### White Finish for Shoes.

Best white glue..... 1 pound  
Zinc sulphate..... 1½ pounds  
Copper sulphate..... 2 pounds  
Bolted pipeclay..... 1 pound  
Magnesium sulphate..... 1 pound  
Light yellow ochre..... 2 ounces  
Water..... 4 gallons

Mix and let stand until all is dissolved, then bring to the boiling point and add 2 pounds oxalic acid, and tragacanth a quantity sufficient. Iron or gum brush in the usual way, and wax. If this is properly used, the red color will not work through.

#### Dressing for White Canvas Shoes.

White pipeclay..... 16 ounces  
Whiting ..... 8 ounces  
Flake white..... 6 ounces  
Precipitated chalk..... 4 ounces  
Powdered tragacanth..... 2 drams  
Carbolic acid..... 2 drams  
Water, enough to make a thin paste.  
Mix the powders, etc., and add enough water to make a paste or cream.

#### Dressing for White Canvas Shoes.

White shellac..... 1 ounce  
Borax ..... 3 ounces  
Hot water..... 16 ounces  
Boil until dissolved and add prepared chalk, until a cream or paste is obtained.

#### Dressing for White Canvas Shoes.

Wash the shoes with soap and water, using as little water as possible. Then apply white pipeclay mixed with a little water by means of a brush. Hang up to dry, brush out the clay and polish.

#### Carriage Top Dressing.

Carriage tops that have faded and become gray can be restored by washing with a solution composed of:

Nutgalls ..... 4 ounces  
Logwood ..... 1 ounce  
Copperas ..... 1 ounce  
Clean iron filings..... 1 ounce  
Sumach berries..... 1 ounce

Put all but the iron filings and copperas in 1 quart of the best white wine vinegar, and heat nearly to the boiling point; then add the copperas and iron filings. Let them stand for 24 hours, and strain off the liquid; apply with a sponge. This is equally good for restoring black cloths.

#### Enamel for Carriage Tops.

Asphaltum, 150 parts; boiled linseed oil, 3 parts; oil of turpentine, 33 parts; benzine, 20 parts. Melt the asphaltum in the oil and add thinners.

#### Restoring Enamel Leather Carriage Tops.

First, wash the top with soft water and castile or brown soap to remove dust, dirt, etc., using a sponge, and then scrub with a moderately stiff brush, cleanse with clean water and dry with chamois leather. Never apply any kind of oil or top dressing without first cleaning the leather.

#### Old, Faded and Cracked Carriage Tops.

The top should be washed with warm water and thoroughly dried; then with a sponge give one or two coats of the formula given

as above, as may be required by the condition of the top. When dry, apply one coat of lampblack, using oil or varnish enough to give a gloss. Moss off when dry and give a coat of drop black mixed a little quicker than the first coat. Follow up with a little coach Japan in it.

#### Blacking for Harness.

Isinglass or gelatin.....	¼ ounce
Powdered indigo.....	¼ ounce
Soft soap.....	4 ounces
Logwood .....	4 ounces
Glue .....	5 ounces

Mix and boil together in 2 pints of vinegar until the glue is dissolved; then strain through a cloth, and bottle for use.

#### Blacking for Harness.

Melt 8 ounces of beeswax in an earthen pipkin, and stir into it 2 ounces of ivory black, 1 ounce of Prussian blue ground in oil, 1 ounce of oil of turpentine, and ¼ ounce of copal varnish. Make it into balls. To be applied with a brush and polished with an old handkerchief.

#### Blacking for Harness.

Treacle .....	½ pound
Lampblack .....	1 ounce
Yeast .....	1 spoonful
Sugar candy.....	1 ounce
Olive oil.....	1 ounce
Isinglass .....	1 ounce
Gum tragacanth.....	1 ounce
An oxgall.	

Mix all together with 2 pints of stale beer, and let it stand before the fire for an hour.

#### Harness Blacking.

Mutton suet.....	2 ounces
Beeswax .....	6 ounces

Melt and add:

Sugar (in fine powder)....	6 ounces
Soft soap.....	2 ounces
Lampblack .....	2½ ounces
Indigo (in fine powder)....	½ ounce

When thoroughly incorporated, add turpentine, 4 ounces, and pour into tins or other receptacles.

#### Harness Jet.

Best glue.....	4 ounces
Good vinegar.....	1½ pints
Best gum arabic.....	2 ounces
Good black ink.....	½ pint
Best isinglass.....	2 drams

Dissolve the gum in the ink, and melt the isinglass in another vessel in as much hot water as will cover it. Having first steeped the glue in the vinegar until soft, dissolve it completely by the aid of heat, stirring to prevent burning. The heat should not exceed 180° F. Add the ink and gum and allow the mixture to again rise to the same temperature. Lastly, mix in the solution isinglass, and remove from the fire. When used, a small portion must be heated until fluid, and then applied with a sponge, and allowed to dry on.

#### Harness Blacking.

Lampblack .....	1 ounce
Brown shellac.....	12 ounces
Venice turpentine.....	6 ounces
Alcohol .....	3 pints
Oil of lavender.....	2 ounces

Mix. Apply with sponge.

#### Harness Blacking.

Sandarac .....	½ ounce
Elemi .....	½ ounce
Shellac .....	3 ounces
Venice turpentine.....	2 ounces
Oil of turpentine.....	2 ounces
Alcohol .....	1 pint
Lampblack .....	5 ounces

Melt together the first 5 ingredients, stir in the alcohol and the lampblack.

#### Harness Blacking.

Oil of turpentine.....	10 ounces
Beeswax .....	2 ounces
Prussian blue.....	½ ounce
Lampblack .....	2 drams

Melt the wax in the turpentine and stir in the powdered pigments.

#### Harness Blacking.

Mutton suet.....	3 ounces
Yellow wax.....	5 ounces
Oil of turpentine.....	10 ounces
Melt together and add the following:	
Sugar .....	5 ounces
Lampblack .....	4 ounces
Prussian blue.....	½ ounce
Soft soap.....	2 ounces

Mix well.

#### Harness Blacking (Glossy) (Enamel).

Ox blood, purified.....	1 pound
Glycerin .....	3 ounces
Oil of turpentine.....	6 ounces
Pine oil.....	8 ounces
Oxgall .....	3 ounces
Formalin .....	1 dram

Mix together cold and strain.

#### Brown Harness Composition.

Yellow wax.....	5 ounces
Oil of turpentine.....	5 ounces
Lard .....	4 ounces

Melt the wax and lard together; remove from the fire, strain and add the turpentine, stirring constantly for a time, then occasionally until the mixture is creamy; at this stage add a mixture of

Spirit varnish.....	4 drams
Caramel .....	1 to 2 drams

And stir until the composition sets. Aniline Bismarck brown may be used in place of the caramel, but it is apt to stain the leather more.

#### Brown Harness Dressing.

Yellow wax.....	5 ounces
Yellow rosin.....	1 ounce
Lard .....	4 ounces
Oil of turpentine.....	5 ounces

Mix and melt and strain; when nearly cold add

Spirit varnish.....	½ ounce
Bismarck brown.....	2 drams

The dye must be rubbed carefully with a little oil before adding, to avoid staining.

#### Harness Enamel.

Raw linseed oil.....	1 pint
White lead.....	1 ounce
Silver litharge.....	1 ounce

Mix, boil and stir till the compound is thick. Then add the desired color, using chalk for white, yellow ochre for yellow, etc.

#### Harness Enamel.

Raw linseed oil.....	1 pint
Wood black.....	½ ounce
Prussian blue.....	2 ounces

Mix and proceed as directed in the above.



If aniline dyes are added, they should be rubbed up carefully with a little linseed oil.

#### Harness Enamel.

Liquid paraffin.....	2 pints
Oil of lavender .....	$\frac{1}{2}$ ounce
Oil of citronella .....	$\frac{1}{4}$ ounce
Spirit of ammonia.....	$1\frac{1}{2}$ ounces

Mix. Shake before using. Add any suitable color as indicated in the preceding formulas.

#### Harness Grease.

Ammonia soap.....	4 pounds
Palm oil.....	1 pound
Hard soap.....	3 pounds
Tannin .....	$\frac{1}{4}$ ounce
Water .....	2 ounces

Melt the oil and hard soap, then add the soft soap and the tannin dissolved in the water.

#### Harness Grease.

Soap .....	2 pounds
Sugar .....	2 pounds
Water .....	4 pints
Potash .....	1 pound
Rape oil.....	20 pounds

The solids are dissolved in the water by the aid of heat and the warmed oil then gradually added. Stir till homogeneous.

#### Harness Grease.

Linseed oil.....	1 pound
Beeswax .....	2 ounces
Yellow rosin.....	2 ounces
Burgundy pitch.....	1 ounce
Soft soap.....	4 ounces

Melt together and mix well.

#### Harness Grease.

Wax .....	1 pound
Rosin .....	2 ounces
Oil of turpentine.....	12 ounces
Lampblack .....	8 ounces
Soft soap.....	8 ounces

Melt together and mix intimately.

#### Harness Oil.

Neatsfoot oil.....	10 ounces
Oil of turpentine.....	2 ounces
Petrolatum .....	4 ounces
Lampblack .....	$\frac{1}{2}$ ounce

Mix and melt together at a gentle fire; stir well.

#### Harness Oil.

Oil of turpentine.....	8 ounces
Yellow wax.....	2 ounces
Prussian blue.....	$\frac{1}{2}$ ounce
Lampblack .....	$\frac{1}{4}$ ounce

Mix, melt together and add the powders. Stir well.

#### Harness Oil.

Oil of turpentine.....	2 pounds
Yellow wax.....	4 ounces
Lampblack .....	1 dram
Bone black.....	$\frac{1}{2}$ ounce
Muriatic acid.....	1 dram

Melt the wax and turpentine and add the other ingredients, stirring well.

#### Harness Oil.

Neatsfoot oil.....	1 pound
Beef tallow.....	3 pounds

Mix and melt together over a slow fire. Coloring may be added before cooling.

#### Harness Oil.

Asphaltum .....	2 ounces
Beeswax .....	3 ounces
Lampblack .....	$\frac{1}{4}$ ounce
Prussian blue.....	$\frac{1}{2}$ dram
Neatsfoot oil.....	2 pints

Melt the asphaltum and beeswax and gradually add the other ingredients. Stir well.

#### Harness Oil.

Yellow wax.....	4 ounces
Petrolatum .....	4 ounces
Oil of turpentine.....	8 ounces
Neatsfoot oil.....	2 pounds
Lampblack .....	1 ounce
Prussian blue.....	$\frac{1}{4}$ ounce

Melt together and stir well till cool.

#### Harness Paste or Cream.

Carnauba wax.....	10 ounces
Beeswax .....	3 ounces
Stearin .....	1 ounce
Oleic acid.....	1 ounce
Oil of turpentine.....	3 pints

Melt the solids, add the turpentine, then the oleic acid in which the required coloring has been dissolved. Stir till cool.

#### Harness Paste or Cream.

Carnauba wax.....	1 ounce
Beeswax .....	4 ounces
Pearlash .....	6 drams
Boiling water.....	6 ounces
Oil of turpentine.....	1 pint

Melt the waxes in the turpentine and while hot stir in the pearlash dissolved in the water. Stir till cool. Any coloring, rubbed up in oil, may be added before the mixture cools.

#### Harness Paste.

Ceresin .....	8 ounces
Yellow wax.....	8 ounces
Japan wax.....	8 ounces
Oil of turpentine.....	3 pints

Mix and melt over a slow fire, adding coloring as desired.

#### Waterproof Harness Paste.

Put into a glazed vessel 2 ounces of black rosin, which is melted over a fire. When dissolved add 3 ounces of beeswax, and when this is melted remove from the fire, and add  $\frac{1}{2}$  ounce of fine lampblack,  $\frac{1}{2}$  dram of Prussian blue in powder. These are stirred well together, and enough turpentine is added to form into a thin paste. Allow to cool, apply with a sponge, and finally polish with a soft brush.

#### Waterproof Harness Dressing.

Salad oil.....	1 pint
Mutton suet.....	4 ounces
Spermaceti .....	1 ounce
White wax.....	1 ounce

Melt together.

#### Waterproof Harness Dressing.

Carbon disulphide.....	2 ounces
Gutta-percha .....	$\frac{1}{2}$ ounce
Asphaltum .....	2 ounces
Linseed oil.....	1 ounce

Dissolve the gutta-percha in the carbon disulphide and the asphaltum in the oil. Mix.

#### Waterproof Leather Dressing.

Oleic acid.....	3 ounces
Ammonia soap.....	$2\frac{1}{2}$ ounces
Hot water.....	3 ounces
Stearin .....	6 drams
Tannin .....	2 drams

Melt the stearin in the oleic acid; dissolve the soap and tannin in the water. Then mix well.

**Waterproof Harness Composition.**

Paraffin .....	1 pound
Lard .....	$\frac{1}{2}$ pound
Rosin .....	6 ounces
Syrup .....	6 ounces
Lampblack .....	3 ounces
Prussian blue.....	$\frac{1}{2}$ ounce
Oil of mirbane.....	1 dram

Melt the fats and stir in the other ingredients. Stir till cool.

**Harness Polish.**

Laundry soap, shavings...	2 ounces
Starch .....	1 ounce
Nutgalls, bruised.....	1 ounce
Iron sulphate.....	1 ounce
Water .....	$\frac{1}{2}$ gallon
Boil together for one hour, filter and add	
Animal charcoal.....	5 ounces
Extract logwood.....	1 ounce
Brown molasses .....	10 ounces
Carbolic acid.....	1 ounce

Mix well.

**Harness Polish.**

Mutton suet.....	2 ounces
Beeswax .....	6 ounces
Sugar .....	6 ounces
Soft soap.....	2 ounces
Lampblack .....	1 ounce
Oil of turpentine.....	4 ounces
Water .....	4 ounces

Melt together the suet, wax and oil of turpentine; dissolve the sugar and soap in the water; mix the two solutions and add the black. Stir well.

**Vaseline Harness Composition.**

Prussian blue, in fine powder,  $\frac{3}{4}$  ounce; lampblack, 4 ounces; molasses, 2 ounces; soft soap, 2 ounces. Mix together in a large mortar, previously warmed, and add: Vaseline, 6 ounces; ceresin, 5 ounces; yellow rosin,  $\frac{1}{2}$  ounce; melted together, then sufficient turpentine to give the composition the proper consistency. Mix thoroughly.

**Varnish for Cleaning and Preserving Harness and Other Leather Goods.**

Shellac, four ounces; camphor, half an ounce; and rosin, one ounce, are dissolved in one pint of methylated spirit and shaken at intervals for 48 hours. The mixture is then colored according to the kind of leather with which it is to be used. Other resins, solvents, and proportions may be adopted.

**Harness Varnish, or "Reviver".**

Dissolve in about half a pint of methylated spirit 2 ounces of shellac, half an ounce of Venice turpentine, and one ounce of gum benzoin. Stir in a sufficiency of a mixture of four parts drop black, and one of indigo blue, to form a deeply colored varnish, then make up with spirit to the measure of one pint. Apply with a sponge or soft brush.

**Harness Varnish.**

Caoutchouc .....	1 pound
Petroleum .....	1 pound
Carbon disulphide.....	1 pound
Shellac .....	4 pounds
Bone black.....	2 pounds
Alcohol .....	20 pints

Dissolve the caoutchouc in the carbon disulphide and the shellac in the alcohol. Mix the solutions and add the petroleum and lampblack. Mix well.

**Blackening for Leather Seats.**

Beat well the yolks of two eggs and the white of one; mix a tablespoonful of gin and

a teaspoonful of sugar; thicken it with ivory black, add to it the eggs, and use as common blacking, the seats or cushions being left a day or two to harden. This may be used for dress boots and shoes.

**Polish for Chair Leather.**

Five eggs,	
Sperm oil.....	6 ounces
Acetic acid.....	6 drams
Glycerin .....	6 drams
Oil of turpentine.....	1 ounce
Denatured alcohol.....	5 ounces
Water, enough to make....	2 pints

Beat up the eggs. Mix the oils, acid and glycerin, and incorporate with the eggs. Then gradually add the alcohol and water previously mixed. Shake well before using. Apply with sponge and polish.

**Black, for Leather.**

Simple treatment with solution of iron sulphate or coppers will dye leather black. Iron acetate may be used instead with advantage. The leather may be first mordanted with solution of logwood extract.

**Blue Black, for Leather.**

Beeswax .....	3 ounces
Black rosin.....	2 ounces

Melt together, and then add:

Prussian blue.....	1 ounce
Lampblack .....	$\frac{1}{2}$ ounce

While the mixture is cooling add oil of turpentine till a suitable consistency is obtained. The mixture should be applied with a soft rag, and the leather afterward polished with a brush.

**Black, for Leather.**

Dissolve  $1\frac{3}{4}$  ounces solid logwood extract and  $\frac{3}{8}$  ounce solid fustic extract in boiling water and make up with water to 35 fluid ounces. The leather, which must have been previously cleaned and stretched out, is brushed over five times at 100° F.; 155 grains of potassium chromate and 77 grains of copper sulphate are then dissolved in the same quantity of water; the leather is brushed twice with the solution, and then again with the decoction of logwood; 150 grains of ammonia water are then poured into 35 fluid ounces of water, and sufficient of the solution used to dress the leather. To make the leather supple, stir up 150 grains yolk of egg in 75 grains of glycerin, mix with water to make 35 fluid ounces, and rub the leather with the mixture. Let it get half dry, and rub with a clean woolen rag.

**Blue, for Leather.**

(Solution No. 1.)

Gallnuts, powdered.....	$\frac{1}{2}$ ounce
Water .....	2 $\frac{1}{2}$ pints

Make an infusion.

(Solution No. 2.)

Soluble aniline blue.....	3 drams
Glue .....	1 dram
Water .....	2 $\frac{1}{2}$ pints

Use Solution No. 1 first and then apply Solution No. 2, three times. Dry and polish.

**Bronzing, for Leather.**

A small amount of so-called soluble (in water) aniline violet is dissolved in a little water, and the solution is brushed over the articles; it will dry quickly and perhaps will have to be repeated.

**Leather Bronze.**

Tannin .....	5 parts
Alcohol .....	100 parts

Gold bronze, true, enough.

Mix and apply this mixture with a sponge.

**Chestnut Brown, for Leather.**

The moistened leather is primed with a solution of 1 kilogram of copper acetate in 50 liters of water, "slicked" out, and then painted with a solution of yellow potassium prussiate in feebly acid water.

**Chocolate Brown, for Leather.**

Brazil wood (1½ parts) is boiled with water (45 parts) for 2 hours, and a little iron acetate added, according to shade. Apply.

**Cutch Brown, for Leather.**

A decoction of ½ kilogram cutch, 60 grams of copper sulphate, and 40 liters of water is applied upon a feeble priming.

**Dark Brown, for Leather.**

Fustic, 8 parts; logwood, 1 part; Brazil wood, 2 parts; saunders, 1 part; and quercitron, ½ part, are boiled with soft water for 1 hour, and strained through linen; the vitriol treatment serves to darken the shade; for light brown tints the vitriol is omitted and the skin is primed with dilute potash.

**Olive Brown, for Leather.**

Hungarian fustic, 2 parts; quercitron, 1 part; and logwood, ¼ part, are boiled, and the solution applied upon a strong potash priming; vitriol treatment follows.

**Brown, for Leather.**

(Mordant.)

Cream of tartar.....	3 ounces
Alum .....	4 ounces
Water .....	10 gallons

(Dye.)

Fast aniline brown.....	1½ ounces
Water .....	10 gallons

Apply the mordant first and afterwards the solution of dye.

**Brown, for Leather.**

Spanish saffron.....	½ ounce
Annatto .....	¼ ounce

Mix and boil in 1 quart of water, strain and add alcohol, 4 ounces.

**Gray for Leather.**

Tannin .....	155 grains
Water .....	35 ounces

Dissolve and apply with a brush. Then apply the following solution with a brush:

Copperas .....	30 grains
Water .....	35 ounces

If not dark enough, repeat the application.

**Light Olive Green, for Leather.**

A decoction of fustic (1 kilogram), archil (1½ kilograms), and water (2 liters) is painted on a light bottom of prussian blue. For picric green, an aqueous solution of picric acid is substituted for the fustic and archil.

**Dark Green, for Leather.**

Quercitron (4 parts) and logwood (1 part) upon a strong priming of vitriol.

**Green, for Leather.**

Verdigris .....	1½ ounces
Ammonium chloride.....	¼ ounce
Vinegar .....	9 ounces

Mix and dissolve. Apply with brush and polish.

**Yellow-Green (Parrot-Green), for Leather.**

Verdigris .....	3 ounces
Ammonium chloride.....	1 ounce
Extract of saffron.....	2 drams
Wine vinegar .....	1 pint

Mix and dissolve. Apply with brush and polish.

**Lilac, for Leather.**

(Solution No. 1.)

Dissolve 155 grains tannin in 35 ounces water.

(Solution No. 2.)

Dissolve methyl violet (30 to 150 grains) in 35 ounces water.

(Solution No. 3.)

Dissolve glue, 35 grains in 35 ounces water and add glycerin, 1 dram.

Paint with Solution No. 1. Then paint with Solution No. 2 and repeat until three applications have been made. Then apply Solution No. 3 and dry.

**Mahogany, for Leather.**

Alkanet root, powdered....	15 grains
Aloes, powdered.....	30 grains
Dragon's blood, powdered.	30 grains
Alcohol .....	1 ounce

Digest for 3 days, then filter.

Moisten the leather with dilute nitric acid (1:5) and apply the above solution. Repeat if color is not dark enough.

**Orange, for Leather Goods.**

A red priming is given by Brazil wood, and fustic applied to impart the yellow. Seventy-five parts of the former to 25 parts of the latter produce a red orange, equal parts an ordinary orange, and 25 to 75 parts a yellow orange.

**Red, for Leather.**

Cochineal in a linen bag is boiled with water containing about 2 per cent. of ammonia water.

**Alizarin Red, for Leather.**

A feeble flesh color is produced by brushing the leather with a solution of alizarin in dilute soda, and then rinsing with soap-water.

**Scarlet, for Leather.**

Zaffer extract, diluted with 60 parts of water containing 1 part of tartar, is painted on a feeble annatto bottom.

**Ordinary Red, for Leather.**

A decoction of saunders wood is used upon a feeble priming of alum, free from iron.

**Crimson Red, for Leather.**

Cochineal .....	2 ounces
Water .....	1 pint
Alum .....	½ ounce

Mix, dissolve, filter and apply with brush.

**Scarlet Red, for Leather.**

Logwood .....	1 pound
Brazil wood.....	8 ounces
Onion peel.....	2 ounces
Salt .....	½ ounce
Alum .....	½ ounce
Water .....	4 gallons

Mix, boil for ½ hour, and strain. Apply.

**Lemon Yellow, for Leather.**

Turmeric (1 part) is digested in alcohol (4 parts) for 24 hours, diluted with water, and applied upon a feeble potash bottom.



**Barberry Yellow, for Leather.**

One kilogram of barberry root, 30 kilograms of water and 200 grams of iron free alum. Mix and apply.

**Chrome Yellow, for Leather.**

The dye is first applied with a solution of 30 grams red potassium chromate in  $\frac{1}{2}$  liter of water, and then fixed by applying a solution of 30 grams lead acetate in  $\frac{1}{2}$  liter of water.

**Stain for Russet Leather.**

Boil  $\frac{1}{2}$  ounce of saffron and  $\frac{1}{4}$  ounce of annatto in water until the dye is extracted. Then add sufficient alcohol to set the color. Apply.

**Stain for Russet Leather.**

A stain may be made from saffron alone, by boiling a quantity in water until the coloring matter is exhausted, straining, and when cold adding alcohol enough to set the color. The shade may be varied by the addition of oxalic acid until the required tint is reached.

**Stain for Russet Leather.**

Boil a given amount of saffron in water until the color is extracted, digest a quantity of annatto in urine and mix the two solutions, the proportion of each determining the shade. The more annatto used the darker the shade.

**Dressing for Leather Hose.**

Melt together 1 gallon of neatsfoot or castor oil (the "bottoms" will answer as well as the best) and 2 pounds of tallow; apply hot, using an ordinary paint brush for the purpose. The hose should be quite dry when this is done. The addition of a little carbolic acid or wood creosote to the above is recommended as a protection against attacks of the rats.

**White Polish for Leather.**

Dissolve in 150 parts alcohol 20 parts rosin, 10 parts Burgundy pitch, 25 parts sandarac and 5 parts white shellac. Apply with a soft brush. Pipeclay, chalk, or other pulverulent white material may be added, if thought needful.

**Blackening for Leather Articles.**

Boiling water.....	3 pounds
White wax.....	$\frac{1}{2}$ pound
Transparent gelatin.....	1 ounce
Gum senegal.....	2 ounces
White soap.....	$1\frac{1}{2}$ ounces
Brown sugar.....	2 ounces

Mix and let stand. When the mixture is cold,  $2\frac{1}{2}$  ounces of alcohol and 3 ounces of Frankfort black are added. It is applied to the leather with a soft brush, and when dry the leather is rubbed with pumice stone and finely polished.

**Leather, Black Lacquer for.**

Red shellac.....	6 parts
Venice turpentine.....	1-5 part
Castor oil.....	1-5 part
Sandarac.....	1-5 part
Alcohol.....	30 parts
Nigrosine.....	1 part

Mix and dissolve.

**Cheap Lacquer for Leather.**

Black pitch.....	23 parts
Benzole.....	69 parts
Oil of turpentine.....	8 parts

Dissolve the pitch in the benzole, then add the oil of turpentine. Apply with a brush.

**Paste for Leather Breeches.**

Pipeclay.....	1 pound
Spanish white.....	$\frac{1}{2}$ pound
Flake white.....	6 ounces
Precipitated chalk.....	4 ounces
Spermaceti.....	1 ounce
Lard.....	8 ounces

Mix.

**Transparent Leather.**

The cleansed skin is repeatedly coated with a mixture of 100 parts of glycerin, 0.2 of salicylic acid, 0.2 of picric acid, and 2.5 of borax; then nearly dried and impregnated in a dark room with a solution of potassium dichromate; when completely dried the leather is coated on both sides with shellac varnish.

**Flexible Varnish for Leather.**

Burnt umber.....	2 ounces
Asphaltum.....	1 ounce
Linseed oil.....	1 quart

Dissolve the asphaltum by the aid of heat in a little of the oil, then add the umber ground in the oil; mix, add the rest of the oil; boil, and when cool, thin with oil of turpentine.

**To Preserve Leather.**

A solution of 1 ounce solid paraffin in 1 pint light naphtha, to which 6 drops sweet oil have they absorb no more. One dressing will do for the uppers. This process vastly increases the tensile strength of every stitch; and, while not removing the natural moisture of the leather, decidedly waterproofs the boot. A sole is said to last two months longer when so treated.

**To Restore Leather Bags.**

Wash over with a strong hot decoction of logwood, and if the color does not please, go over afterward with a solution of copperas.

**Leather, to Restore Softness.**

To restore the softness and pliancy of leather which has become hard by having been wet, apply neatsfoot oil and rub it in. Castor oil is a good substitute for neatsfoot oil for softening leather belts, boots, and harness. Or use one quart neatsfoot oil, 4 ounces beef tallow, and 3 tablespoonfuls lampblack; add 4 ounces beeswax for use in summer weather.

**Leather Preservative.**

Beeswax.....	18 parts
Spermaceti.....	6 parts
Oil of turpentine.....	66 parts
Asphalt varnish.....	5 parts
Borax, powdered.....	1 part
Vine twig black.....	5 parts
Prussian blue.....	2 parts
Nitrobenzol.....	1 part

Melt the wax, add powdered borax, and stir till a kind of jelly has formed. In another pan melt spermaceti, add asphalt varnish, previously mixed with oil of turpentine, stir well, and add to the wax. Last, add the color, previously rubbed smooth with a little of the mass. Perfume with nitrobenzol and pour into boxes. Apply in small quantities, wipe with a cloth, and brush. Use only once a week.

**To Take Oil Out of Leather.**

Use strong ammonia water which will take oil out without injury to the leather. It must be used two or three times in order to get all the oil out. First use it and let the leather stand until more of the oil comes out, and apply again. This is the only thing that will take oil out and not hurt the leather.

**Furniture Leather Reviver.**

Oil of turpentine..... 6 ounces  
 Ammonia solution..... 1 ounce  
 One egg.

Mix and add water to 10 ounces.

**Leather Renovator.**

Denatured alcohol..... 2 pints  
 Shellac, powdered..... 3 ounces  
 Rosin ..... 10 drams  
 Sandarac ..... 1 dram  
 Lampblack ..... 1 dram  
 Aniline black..... 1 dram

Dissolve the shellac, rosin and sandarac in the alcohols, and then stir in the blacks.

**Leather Preserver.**

Castor oil, either alone or mixed with neats-foot oil will preserve leather better than anything else. Apply once a week to leather shoes, it will cause them to last twice as long.

**Leather Renovator and Preserver.**

Mutton tallow..... 10 ounces  
 Linseed oil..... 10 ounces  
 Venice turpentine..... 1 ounce

Melt together on a water bath. Apply.

**Leather Renovator and Preserver.**

Whale oil..... 8 ounces  
 Tallow ..... 4 ounces  
 Beeswax ..... 1½ ounces  
 Burgundy pitch..... 1 ounce  
 Castor oil..... 4 ounces  
 Oil of mirbane..... 2 drams

Melt together at a gentle heat and strain. Apply with a soft rag.

**Tanning Skins for Mats or Robes.**

Sheepskins.—Wash while fresh in strong soapsuds, first picking from the wool all the dirt usually found therein. Paraffin, 1 tablespoonful to 3 gallons of water, will aid in removing impurities. Continue to wash the skin in fresh suds until it is white and clean. Then dissolve ½ pound of salt and alum in 3 pints boiling water, put with enough water to cover the skin, which should soak in the solution 12 hours and then be hung on a line to dry. Rub into the skin 1 ounce each of pulverized alum and saltpetre, and if the skin is large, double the quantity. Rub them an hour or two. Hold the skin side out, and hang it away for 3 days, rubbing it every day or until perfectly dry. Then with a blunt knife clear the skin of impurities, rub it with a pumice or rotten stone and trim it into shape. If it is to be dyed, have a shallow pan as large as the skin in which to prepare the dye, so that the skin can be laid down smoothly into the vessel, that all parts may be equally immersed in the dye. This should not be more than one inch deep, otherwise the skin might be injured by the heated dye. After coloring, again stretch the skin to dry, and then comb with a cotton card.

**Tanning Skins for Mats or Robes.**

Soft water..... 10 gallons  
 Wheat bran..... ½ bushel  
 Salt ..... 7 pounds  
 Sulphuric acid..... 2½ pounds

Dissolve all together and place the skins in the solution and allow them to remain 12 hours; immerse 12 hours, or longer if necessary. The skins may be then taken out, well washed and dried. They can be beaten soft if desired.

**Tanning Skins for Mats or Robes.**

The following process has been devised to tan skins other than sheep, with the hair on:

Stretch the skin tightly and smoothly upon a board, hair side down, and tack it by the edges to its place. Scratch off the loose flesh and fat with a blunt knife, and work in chalk freely with plenty of rubbing. When the chalk begins to powder and fall off, remove the skin from the board, rub in plenty of powdered alum, wrap up closely and keep in a dry place for a few days. By this means it will be made pliable, and will retain the hair.

**Black Cold Dye for Goat Skins.**

Rub into the hair, with a brush, a solution of ½ ounce silver nitrate in 1 pint soft water, and hang in sun to dry. Afterward apply, in same day, a solution of 1 ounce potassium sulphate in 1 pint of water. Dry in sun; afterward rub off and dry in shade; work occasionally while drying. To intensify, apply a solution of pyrogallie acid before rinsing.

**To Dye Sheep Skins Brown.**

Place the skins over night in water heated from 115 to 140° F., and containing sufficient ammonia water to make them smell of it. Take them out the next day and wash them. Now exhaust 2 pounds of logwood by boiling it several times, and dilute the liquor to 5 gallons. Place the skins in the bath for 3 hours, then take them out and let them drain off. Then place them in a bath of wood vinegar of 50° B. for 1 hour, and move them occasionally. Take them out, rinse and dye them in a fresh bath heated to 140° F. and containing 1¾ ounces of Bismarck brown; take them out, let the liquor drain off, rinse, and then dry the skins at a moderate heat and rather slowly. It is best to lay the skins flesh side up on a board, as this will prevent shrinking. The skins, when dry, must undergo further treatment to render them soft and pliable. For this purpose mix bran to a homogeneous mass with tepid water, and to every 2½ gallons add 3½ ounces of glycerin of 28° B. This mixture is applied to the skins, and when dry brushed off again. The yolks of 10 eggs, mixed with 1½ gallons of water and 3½ ounces of Epsom salt can be substituted for the bran.

**Leather Working.**

Formulas relating to the manufacture and uses of leather and leather articles are always in demand, and useful for the druggist to know as well as to have at hand. Indeed, the manufacture of leather is a very important industry, and in point of value and extent, its uses are only exceeded by those of cotton, wool and iron. Below are given various formulas used in and on leather, such as dyeing, gilding, restoring, cleansing, etc.

The following particulars are applicable to the processes used in dyeing leather by means of the various aniline colors. These dyes are particularly convenient, as the coloring can be effected without the aid of mordants:

Fine grain leather cannot stand treatment with alcoholic solutions, so that the aqueous dyes are preferable, and if alcoholic solutions have to be used they should be diluted to the verge of precipitation. Acid colors are more important than the basic. Tanned leather must generally be bleached by drawing it several times through a warm, strong sumach decoction, or leaving it immersed therein for several hours. Dyes which do not take uniformly on the leather must be mordanted; in nearly all cases they are best applied by painting them on. The most important of the saline mordants in this branch are the different soaps. A good, hard, white, soda soap is generally the best, castile being recommended.

When the skin has been painted it is rinsed with cold water while upon the table and well stretched with a brass slicker; another coat

of dye is applied, and again washed off with cold water; the skin is then rubbed until the water runs off clean. Colors that require to be darkened are brushed over with a solution of Salzbürg vitriol (ferrosucupric sulphate), a mixture of ferrous and cupric sulphates, 25.3 grams of which are dissolved in 3 liters of water. The skin is finally washed with clean water and dried.

#### Buffalo Hides, to Soften.

Apply cod liver oil or the "Leather Preserver" directed in a preceding formula.

#### Buffalo Hides, to Preserve.

Dip them for 24 hours in a 2 per cent. solution of carbolic acid and dry.

#### Dehairing Hides.

Make a dilute solution of ammonia water and sulphuric acid and place the hides in it. Coat woolly hides on the flesh side with a paste made of potter's clay and the above solution.

#### Dehairing Hides.

Thick hides are allowed to sweat, that is, they are rubbed on the fleshy side with common salt or saturated with wood vinegar. The hair can then be removed with scraping knives. Thinner skins are placed in pits with lime or sodium sulphide.

#### Furs and Skins, to Preserve.

Corrosive sublimate.....	¼ pound
Saltpetre .....	½ pound
Burnt alum.....	½ pound
Flowers of sulphur.....	½ pound
Camphor .....	¼ pound
Black pepper, powdered...	1 pound
Tobacco, powdered.....	1 pound

Keep in glass-stoppered bottles. Give 2 or 3 rubbings.

#### Skins, to Preserve.

Yellow soap.....	1 pound
Lime .....	1 ounce
Camphor .....	1 ounce
Arsenic .....	1 ounce
Alum .....	1 ounce

Powder and mix. Free the skins from all fat and rub well with the above.

#### Skins, to Preserve.

Sulphur .....	2 drams
Potassium nitrate.....	2 drams
Black pepper.....	½ ounce
Camphor .....	½ ounce
Corrosive sublimate.....	½ ounce
Burnt alum.....	½ ounce
Tobacco .....	½ ounce

Reduce to a fine powder, mix and well rub into the skins freed from fat.

#### Skins, to Preserve.

Mercury bichloride.....	1 ounce
Hydrochloric acid.....	3 drams
Denatured alcohol.....	2 ounces

Mix and dissolve. Paint on the flesh side of the skin with a brush.

#### Hardening Leather.

By putting leather repeatedly in solutions of

Slaked lime.....	½ pound
Sal soda.....	2 pounds
Water .....	½ gallon

and boiling, it becomes as hard as stone.

## FIRE EXTINGUISHERS, FIRE-PROOFING, ETC.

#### Fire Extinguisher.

Common salt.....	1 ounce
Sodium nitrate.....	1 ounce
Ammonium chloride.....	2 ounces
Magnesium chloride.....	4 ounces
Water .....	1 pint

Dissolve and put into a bottle. When wanted for use, throw the bottle into the fire.

#### Fire Extinguisher.

Calcium chloride.....	20 ounces
Sodium chloride.....	5 ounces
Water .....	5 pints

Dissolve. Use as directed in the preceding.

#### Fire Extinguisher.

Carbonated water in siphons is a very good fire extinguisher. To produce carbonic acid gas, an iron cylinder is divided into two compartments. The smaller one contains sulphuric acid, the larger one a saturated solution of sodium bicarbonate. By inverting the bottle or by turning a crank the sulphuric acid flows into the solution, generating carbonic acid gas. The pressure is sufficient to force a nozzle open, from which the carbonated water is discharged.

#### Fire Extinguisher, Dry.

Sodium chloride.....	4 ounces
Sodium bicarbonate.....	3 ounces
Sodium sulphate.....	1 ounce
Calcium chloride.....	1 ounce
Sodium silicate.....	1 ounce

Mix and preserve in a pasteboard box, which is to be thrown into the fire.

#### Fire Extinguisher, Dry.

Sodium chloride.....	3 ounces
Ammonium chloride.....	3 ounces
Sodium bicarbonate.....	4 ounces

Mix and use as directed in the preceding.

#### Fire Extinguisher (Hand Grenade).

Fill bottles of thin blue glass with a saturated solution of calcium chloride, ammonium chloride or borax, or mixture of equal parts of these solutions.

#### Fire Extinguisher.

Ammonium chloride.....	2 ounces
Burnt alum.....	3½ ounces
Ammonium sulphate.....	30 ounces
Sodium chloride.....	20 ounces
Sodium carbonate.....	3½ ounces

Put the salts in the order given into 6 gallons of water. Let the mixture stand for a short time and decant the clear solution. Fill into bottles.

#### Hand Grenade.

Sodium hyposulphite.....	8 ounces
Sodium chloride.....	1½ ounces
Ammonium chloride.....	½ ounce
Water, enough to fill the grenade	(about 1 quart).

#### Hand Grenade.

Into a strong spherical bottle put a mixture of one part of sulphuric acid and 3 parts of water. Put in 8 ounces ground marble to each pint of the liquid and immediately cork securely. When the bottle is broken in the fire the released carbonic acid gas will extinguish the flames.



**Fire Extinguisher.**

Common salt.....	2 pounds
Ammonium chloride.....	10 pounds
Water .....	3 quarts

Mix and fill into bottles of thin glass. To be thrown into the fire.

**Hand Grenade.**

Sodium chloride.....	1 ounce
Calcium chloride.....	12 ounces
Magnesium chloride.....	4 ounces
Potassium bromide.....	2 ounces
Barium chloride.....	¼ ounce
Water .....	4 pints

Mix, dissolve, and fill into bottles.

**Hand Grenade.**

Sodium carbonate.....	1 ounce
Sodium chloride.....	5 ounces
Water .....	4 pints

Mix, dissolve, and fill into bottles.

**Liquid Fire Extinguisher.**

Calcium chloride.....	1 pound
Magnesium chloride.....	5 ounces
Water .....	2 pints

Mix and dissolve.

**Liquid Fire Extinguisher.**

Sodium chloride.....	1 pound
Ammonium chloride.....	½ pound
Water .....	3½ pints

Mix and dissolve.

**Fire Extinguisher.**

Ferrous sulphate.....	1 pound
Ammonium sulphate.....	4 pounds
Water .....	3 gallons

Mix and dissolve.

**Fire Extinguisher, Dry.**

Alum .....	6 pounds
Ammonium sulphate.....	12 pounds
Ferrous sulphate.....	1 pound

Powder and mix.

**Fire Extinguisher, Dry.**

Common salt.....	6 pounds
Ammonium chloride.....	6 pounds
Sodium bicarbonate.....	8 pounds

Mix.

**Fire Extinguisher.**

Iron sulphate.....	1 pound
Ammonium sulphate.....	4 pounds
Water .....	3 gallons

Mix, dissolve, and fill into hand grenades.

**Fire Extinguisher.**

Sodium chloride.....	12 pounds
Alum .....	6 pounds
Glauber salt.....	2 pounds
Sodium carbonate.....	1 pound
Waterglass .....	1 gallon
Water .....	1 gallon

Dissolve the dry salts in the water and add the waterglass.

**Fire Grenade, Cheap.**

A common quart bottle filled with a saturated solution of common salt will act as a good fire extinguisher.

**Fire Kindlings.**

Rosin .....	6 pounds
Tar .....	4 pounds

Melt together and dip corncobs into the resulting liquid, and dry.

**Fire Kindlings.**

Rosin .....	6 pounds
Tar .....	4 pounds

Melt and work in as much sawdust as possible. Spread the mass out in the air to dry and break up into small lumps.

**Fire Kindlings.**

Rosin .....	10 pounds
Tallow .....	2 pounds

Melt and add sawdust as directed in the preceding.

**Fire Kindlings.**

Small sticks are dipped in petroleum or turpentine and tied together. They are then encased in wax paper and used when needed.

**Chimney Cleaning Powder.**

Common salt.....	2 pounds
Sulphur .....	1 pound
Armenian bole.....	4 ounces

Mix. Burn under the chimney so that the fumes rise and pass upward through it.

**Chimney Cleaning Powder.**

Copper sulphate.....	7 pounds
Ammonium chloride.....	8 pounds
Saltpetre .....	5 pounds
Fine sand.....	2 pounds
Coke dust.....	2 pounds

Mix well and burn as directed in the preceding.

**Chimney Cleaning Powder.**

Sodium chloride.....	7 pounds
Potassium nitrate.....	4 pounds
Flowers of sulphur.....	7 pounds
Cuprous sulphate.....	7 pounds
Ammonium chloride.....	8 pounds

Mix well and use as directed above.

**Fire Extinguisher in Chimney.**

Shut the door and throw a few handfuls of salt on the fire. The hydrochloric acid evolved will kill the fire.

**Fireproofing Solution for Fabrics.**

Sodium tungstate.....	1 pound
Water .....	1½ pints

Dissolve and add a solution of:

Sodium phosphate.....	2 ounces
Water .....	1 pint

Mix.

**Fireproofing Solution for Fabrics.**

Ammonium sulphate.....	8 ounces
Ammonium carbonate.....	2½ ounces
Boric acid.....	3 ounces
Borax .....	2 ounces
Water .....	10 pints

Dissolve and add:

Starch .....	2 ounces
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Heat and stir the mixture till it boils. The articles are dipped in the solution, wrung out and allowed to dry.

**Fireproofing Solution for Fabrics.**

Aluminum sulphate, a saturated solution in water. Add a solution of ammonium phosphate as long as a precipitate is formed. Then add a solution of ammonium chloride until the precipitate is redissolved. Impregnate the fabric in this fluid.

**Fireproofing Solution for Fabrics.**

Sal ammoniac.....	2 pounds
Zinc sulphate.....	1 pound
Water .....	2 gallons

Dissolve and add:

Starch, as required.

Keep the fabric in the solution and dry.

**Fireproofing Solution for Fabrics.**

Alum .....	1 pound
Ammonium phosphate.....	1 pound
Water .....	2½ gallons

Mix and dissolve.

**Fireproofing for Paper.**

Ammonium sulphate.....	8 ounces
Boric acid.....	3 ounces
Borax .....	2 ounces
Water .....	5 pints

Dissolve with a gentle heat and impregnate the paper.

**Fireproof Ink.**

Platinic chloride.....	10 grains
Chinese ink.....	30 grains
Gum arabic.....	2 grains
Water .....	2 drams

Mix and dissolve.

**Fireproofing for Paper.**

Pass paper through a strong solution of alum and dry.

**Fireproofing for Woodwork, Ropes, Straw, Mats, Bags, etc.**

Ammonium chloride.....	15 ounces
Boric acid.....	6 ounces
Borax .....	3 ounces
Water .....	5 pints

Mix and dissolve. Immerse the articles for 15 minutes in the boiling solution and dry.

**Fireproofing for Canvas and Tents.**

Ammonium sulphate.....	1 pound
Boric acid.....	1 ounce
Ammonium carbonate.....	1 ounce
Borax .....	3 ounces
Glue .....	1 ounce
Water .....	1 gallon

Dissolve and impregnate the canvas with the resulting mixture.



# PART SEVEN.

## Paints, Varnishes, Floor Stains, Etc.

### PAINTS.

#### Tints and Colors for Paints.

Proportion of colors for ordinary paints:

Colors.	Ingredients by weight for 100 parts.							
	White Lead.	Lamp-black.	Red Lead.	Red Ochre.	Verdigris.	Burnt Umber.	Spanish Brown.	
White .....	100	...	...	...	...	...	...	...
Black .....	...	100	...	...	...	...	...	...
Green .....	25	...	...	...	75	...	...	...
Stone .....	99	...	...	...	...	1	...	...
Lead .....	98	2	...	...	...	...	...	...
Red .....	...	...	50	50	...	...	...	...
Chocolate .....	4	...	...	...	...	...	...	96

Here is a list of compound colors, showing the simple colors which produce them:

Buff—white, yellow ochre, red.  
 Chestnut—Red, black, yellow.  
 Chocolate—Raw umber, red, black.  
 Claret—Red, umber, black.  
 Copper—Red, yellow, black.  
 Dove—White, vermilion, blue, yellow.  
 Drab—White, yellow ochre, red, black.  
 Fawn—White, yellow, red.  
 Flesh—White, yellow ochre, vermilion.  
 Freestone—Red, black, yellow ochre, white.  
 French Gray—White, Prussian blue, lake.  
 Gray—White lead, black.  
 Gold—White, stone ochre, red.  
 Green Bronze—Chrome green, black, yellow.  
 Green Pea—White, chrome green.  
 Lemon—White, chrome yellow.  
 Limestone—White, yellow ochre, black, red.  
 Olive—Yellow, blue, black, white.  
 Orange—Yellow, red.  
 Peach—White, vermilion.  
 Pearl—White, black, blue.  
 Pink—White, vermilion, lake.  
 Purple—Violet, with more red and white.  
 Rose—White, madder lake.  
 Sandstone—White, yellow ochre, black, red.  
 Snuff—Yellow, Vandyke brown.  
 Violet—Red, blue, white.

In mixing different colored paints to produce any desired tint, it is best to have the principal ingredient thick and add to it the other paints thinner. In the above list the first named ingredient is the principal one, and the others follow in the order of their importance.

#### To Soften Old Paint.

Sal soda..... 2 pounds  
 Quicklime..... ¼ pound  
 Warm water..... 1 gallon

Mix, stir well and apply hot or cold, and allow it to remain 15 or 20 minutes. Then scrape the paint off and wash thoroughly with acidulated water (vinegar and water), which is for the purpose of neutralizing the alkali and to stop its action upon the wood, and more still upon the repainting.

#### Dissolvent for Paint Skins.

Two pounds concentrated lye, 5 pounds unslaked lime to 15 gallons water. Put in the old paint skins and all the dirty buckets; stir them up occasionally. When the skins are dissolved pour off the lye water, and the paint in the bottom will answer fairly well for rough weatherboarding, etc. Do not throw the water away, as it may be used another time by adding more lye to it.

#### Paint Dryers.

Barytes ..... 25 pounds  
 Whiting ..... 4 pounds  
 Litharge ..... 2 pounds  
 Zinc sulphate..... 2 pounds  
 Sugar of lead..... 2 pounds  
 Boiled linseed oil..... 5 pounds  
 Plaster of paris..... ½ pound

#### Mix.

#### Paint Dryers.

Whiting ..... 16 pounds  
 Barytes ..... 16 pounds  
 White lead..... 3 pounds  
 Boiled linseed oil..... ¾ gallon

#### Mix.

#### Incombustible Paint.

Incombustible paint for rendering woodwork incombustible, is made by mixing pulverized glass, 20 parts; pulverized porcelain, 20; pulverized stone, 20; calcined lime, 10; sodium silicate, 30; total, 100 parts. The solid elements must be reduced to a fine powder, and then mix intimately with the soluble glass, thus forming a glutinous mass, which may be employed as it is for painting, or may be mixed with various colors. The addition of the lime gives a certain unctuousity to the mass for painting, while the combining of this lime with the silicic acid of the soluble glass promotes the ultimate mixture of both the substances. Use a brush for the laying on of the paint in the usual manner, and do it as evenly as possible. The first coat sets immediately, and the second may be given 12 hours afterwards.

#### Blackboard Slating.

Sodium silicate, diluted with water, and colored with lampblack, suspended in a little of the silicate, makes an excellent slating.

#### Blackboard Slating.

Lampblack ..... 1 ounce  
 Powdered pumice stone... 4 ounces  
 Boiled linseed oil..... 8 ounces  
 Spirit turpentine, enough to make..... 2 pints

Mix well together.

#### Blackboard Slating.

Alcohol ..... ½ gallon  
 Shellac ..... ½ pound  
 Ether ..... 2 ounces  
 Lampblack ..... 4 ounces  
 Emery flour..... 2 ounces  
 Powdered pumice stone... 4 ounces

Dissolve the shellac in the alcohol and ether and stir in the other ingredients.



**Blackboard Slating.**

Shellac .....	4 ounces
Ivory black.....	2 ounces
Emery, in fine powder....	1 ounce
Ultramarine .....	1 ounce
Methylated spirit.....	1 quart

Mix and agitate occasionally until the shellac is dissolved.

**Blackboard Slating.**

To make 1 gallon of the paint for a blackboard, take 10 ounces pulverized and sifted pumice, 6 ounces powdered rotten stone (infusorial silica),  $\frac{3}{4}$  pound good lampblack, and alcohol enough to form with these a thick paste, which must be well rubbed and ground together. Then dissolve 14 ounces shellac in the remainder of the gallon of alcohol by digestion and agitation, and finally mix the varnish and the paste together. The mixture is applied to the board with a brush, care being taken to keep the paint well stirred, so that the pumice will not settle. Two coats are usually necessary; the first should be allowed to dry thoroughly before the second is put on, the latter being applied so as not to disturb or rub off any portion of the first. One gallon of this paint will ordinarily furnish two coats for 60 square yards of blackboard. When the paint is to be put on plastered walls, the wall should be previously coated with glue size—1 pound glue, 1 gallon water, enough lampblack to color; put on hot.

**Blackboard Slating.**

Shellac .....	8 ounces
Lampblack .....	1½ ounces
Ultramarine blue.....	3½ ounces
Powdered rotten stone....	4 ounces
Powdered pumice stone....	6 ounces
Alcohol, 95 per cent.....	4 pints

Dissolve the shellac in the alcohol, then add the other ingredients finely powdered, and shake well.

To apply the slating, have the surface of the board smooth and perfectly free from grease. Shake well the bottle containing the preparation, pour a small quantity into a dish, and apply with a new flat varnish brush as rapidly as possible. Shake before using and keep the bottle well corked.

**Blackboard Slating.**

Shellac varnish.....	$\frac{1}{2}$ gallon
Lampblack .....	5 ounces
Emery flour.....	3 ounces

Rub the lampblack with a little alcohol until thoroughly freed from lumps, then gradually work in the shellac varnish and emery flour. Wash the board free from all grease with solution of sal soda, and when dry apply the well mixed slating varnish with a good brush. It is best to thin the varnish with alcohol and apply two or three coats, being careful to allow each to dry before applying the next.

**Blackboard Slating (Bergmann's).**

Prussian blue.....	4 ounces
Chrome green.....	4 ounces
Gilder's sizing.....	4 ounces
Alcohol, sufficient.	

Mix the powders and add sufficient of the alcohol to bring the consistency of cream. Use large, stiff brush; cover quickly. In an hour's time, give second coat. In a day or two, smooth the surface with a hair cloth.

**Blackboard Slating.**

First, fill all cracks and holes and make the rough plaster smooth as possible with plaster of paris, "wet up" with thin glue

size. Next, sandpaper until the entire surface feels smooth to the touch. Then glue size, and paper with good white blank or blank stock if handy to get. It improves the work to abut the edges. When dry, sandpaper lightly to take off any grains of sand or other thing which may be on or under the paper. If the wall has been calclimined, wash it and glue size. If it has been white-washed with lime or gypsum, sandpaper and glue size. To make the slating: Take dry lampblack, cut it down with oil of turpentine, add linseed oil and enough japan to make the slating bind well, and dry hard quickly. Run through the mill, and add fine emery flour in proportion of 2 ounces to the pound of dry lampblack. Thin with oil of turpentine to the consistency of working carriage color, and apply with a wide camel-hair brush. Sandpaper lightly after each coat except the last, which should dry with an egg-shell gloss only.

**Paint Brushes, to Soften.**

To soften the bristles of paint brushes, which have become hard, stand the brushes over night in a solution of soft soap in warm water. Afterwards suspend them in kerosene for 24 hours.

**Paint Brushes, to Soften.**

Make a solution of one part of caustic soda in 3 parts of water. Keep this solution warm (not boiling) and suspend the hardened bristles in it over night. Afterwards clean the brushes with soap.

**Fireproof Paint.**

Seventy pounds of zinc white, 30 pounds of air-slaked lime, 50 pounds of white lead, 10 pounds of zinc sulphate. Mix the zinc white and lime together and grind in elastic oil, then add 1 gallon waterglass 35° B.; then the white lead and zinc sulphate. Stir well. This will make a white paint. If a shade is required, add the necessary color.

**Fireproof Paint.**

Finely pulverized glass...	20 parts
Finely pulverized porcelain	20 parts
Any natural stone, finely powdered .....	20 parts
Burnt lime.....	10 parts
Solution of sodium silicate of about 42 or 36 per cent .....	30 parts

The solid matters are pulverized as finely as possible, then mixed with water, and passed through a fine sieve. They are next well mixed, in a wet state, with the soluble glass, which gives a syrupy mass, that can be used in this condition or mixed with paint. The addition of lime gives a certain unctuousness for whitewashing. The proportion of the ingredients except that of the soluble glass, may be changed; but it is always useful to retain the lime, and, in fact, the general composition as above. Soluble potash waterglass may be used instead of soda waterglass, but it is more expensive. A second coating may be applied after 6 hours. This paint is as hard as stone, and gives complete protection against fire. It is recommended for railway carriages and boats, rendering the latter waterproof and doing away with tar. It sticks well on iron, and does not crack or blister like oil paints.

**Fireproof Paint for Smoke-Stacks.**

Slake sufficient freshly burned quicklime of the best quality. When the slaking is complete, add sufficient skim milk, or water in its absence (though the first is preferable),

to make a liquid of the consistency of cream. To every 10 gallons of this liquid add separately, and in powder, stirring constantly, the following ingredients in the order named: Alum, 2 pounds; potassium subcarbonate (commercial potash will answer), 24 ounces; common salt, 1 pound. If white paint is desired, the liquid needs no further addition, though a few ounces of plaster of paris will improve the whiteness. Lampblack will give a number of shades, from slate-colored to black. Whatever tint be used should now be incorporated, and the whole, after straining through a sieve, should be run through a paint mill. When ready to apply, the paint should be heated nearly to the boiling point of water, and should be put on hot. Fine white sand added to this paint produces a satisfactory covering for roofs and a good protection application for crumbling brick walls.

#### Fireproof Paint for Wood.

Asbestos, powdered.....	40 pounds
Sodium aluminate.....	10 pounds
Lime .....	10 pounds
Sodium silicate.....	30 pounds

Mix thoroughly with enough water for easy application. Coloring may be added as desired.

#### Paint for Metal.

Amber .....	12 ounces
Asphaltum .....	2 ounces
Boiled linseed oil.....	$\frac{1}{2}$ pint
Rosin .....	2 ounces
Oil of turpentine.....	16 ounces

Melt the amber and asphaltum, add the oil and rosin and when nearly cool, the turpentine.

#### Iron Paint.

The following is intended for painting damp walls, kettles, outer walls, or any place or vessel exposed to the action of the open air and weather. Should the article be exposed to frequent changes of temperature, linseed oil, varnish and amber should be mixed with the paint intended for the first two coats, without the addition of any artificial drying medium. The first coat should be applied rather thin, the second a little thicker, and the last in a rather fluid state. It is not necessary to free iron from rust, grease, etc., by means of acid before applying the paint, as a superficial cleaning is sufficient. The paint is equally adapted as a weather-proof coating for iron, wood and stone. The paint consists of linseed oil varnish in which pulverized iron has been mixed.

#### To Make Paint Stick to Iron.

In order to prevent it from detaching itself in large flakes from iron surfaces, all that is necessary is first to wash the surface to be painted with soap and water, rinse, and let dry. When dry, go over it with a stiff brush dipped in hot linseed oil. When this becomes "tacky" the paint can be applied. If the object is small, and of such a nature that heating will not hurt it, raise the temperature until a drop of oil brought in contact with it "smokes." Go over the surface carefully with the raw oil, and let cool. It is now ready to receive the paint. With large objects that cannot be heated, the main point is to apply the oil as hot as possible, the nearer to boiling the better. Objects thus painted will preserve the coat of color for an indefinite period, the paint being unaffected by heat or cold, excessive moisture or excessive dryness. Wood exposed to the weather should be treated in the same manner.

#### Paint for Bicycles.

Amber .....	8 ounces
Linseed oil.....	4 ounces
Asphaltum .....	$1\frac{1}{2}$ ounces
Rosin .....	$1\frac{1}{2}$ ounces
Oil of turpentine.....	8 ounces

Heat the linseed oil and add the amber, asphaltum and rosin. When all is liquid gradually add the turpentine.

#### Paint for Bicycles.

Oil of tar.....	4 ounces
Asphaltum .....	1 ounce
Powdered rosin.....	1 ounce

Mix and dissolve at a gentle heat.

#### Paint for Bird Cages.

Paint with a white zinc paint. Do not use lead. Coat the painted surface with copal varnish.

#### Paint for Boilers.

Asphaltum varnish is a good paint for boilers.

#### Paint for Boilers.

Mix linseed oil and lampblack and apply 2 or 3 times.

#### Paint for Canvas.

A white paint for canvas is made:

White lead.....	32 pounds
Linseed oil.....	$2\frac{3}{4}$ pounds
Soft soap.....	1 pound

Work well together at a gentle heat, then apply.

#### Paint for Canvas, Red.

Indian red.....	20 pounds
Whiting .....	9 pounds
Barytes .....	10 pounds
Linseed oil.....	1 gallon
Soft soap.....	1 pound

Mix well together and apply.

#### Disinfecting Paint.

Add to ordinary paint from 1 to 2% of one or two of the following: Carbolic acid, boric acid, salicylic acid.

#### Paint for Engines (Engine Green).

Brunswick green.....	12 pounds
Barytes .....	3 pounds
Paris white.....	1 pound
Boiled linseed oil.....	1 quart

Mix and apply. Thin with oil of turpentine, if necessary.

#### Paint for Engines (Light).

Brunswick green.....	5 pounds
Barytes .....	8 pounds
Paris white.....	$2\frac{1}{2}$ pounds
Linseed oil.....	1 quart

Mix.

To make ready for use, thin with a mixture of 3 parts of linseed oil and 1 part of oil of turpentine.

#### Fireproof Asbestos Paint, Black.

Powdered asbestos.....	6 pounds
Black oxide of manganese	6 pounds
Lampblack .....	1 ounce
Linseed oil.....	1 quart

For use, thin with a mixture of 3 parts of linseed oil and one of oil of turpentine.

#### Fireproof Asbestos Paint, Blue.

Powdered asbestos.....	6 pounds
Ultramarine .....	6 pounds
Raw linseed oil.....	1 quart

Mix and use as directed in the preceding.

**Fireproof Asbestos Paint, Green.**

Powdered asbestos..... 6 pounds  
 Brunswick green..... 6 pounds  
 Linseed oil..... 1 quart  
 Mix and use as directed above.

**Fireproof Asbestos Paint, Red.**

Powdered asbestos..... 6 pounds  
 Venetian red..... 6 pounds  
 Linseed oil..... 1 quart  
 Mix. Use as directed above.

**Fireproof Asbestos Paint, White.**

Powdered asbestos..... 6 pounds  
 Lead sulphate..... 4 pounds  
 Zinc white..... 2 pounds  
 Linseed oil..... 1 quart  
 Mix. Use as directed above.

**Fireproof Asbestos Paint, Yellow.**

Powdered asbestos..... 6 pounds  
 Ochre ..... 6 pounds  
 Linseed oil..... 1 quart  
 Mix. Use as directed above.

**Paint for Funnels of Yachts, White.**

Zinc white..... 6 pounds  
 China clay..... 6 pounds  
 Ultramarine ..... ½ ounce  
 Pale rosin oil..... 1 pint  
 Sodium silicate..... 1¼ gallons  
 Mix well and strain. Apply.

**Paint for Funnels of Yachts, Black.**

Black oxide of manganese 8 pounds  
 Lampblack ..... 4 pounds  
 Black lead..... ½ pound  
 Rosin oil..... 1 quart  
 Sodium silicate..... 1½ gallons  
 Mix well and strain.

**Paint for Funnels of Yachts, Blue.**

China clay..... 12 pounds  
 Ultramarine ..... 2 pounds  
 Rosin oil..... 1 quart  
 Sodium silicate..... 1¼ gallons  
 Mix and strain.

**Paint for Funnels of Yachts, Cream.**

White chalk..... 5 pounds  
 Whiting ..... 2½ pounds  
 Litharge ..... 12 pounds  
 Rosin oil..... 1 quart  
 Sodium silicate..... 1½ gallons  
 Mix and strain.

**Paint for Funnels for Yachts, Red.**

Chalk ..... 5 pounds  
 Whiting ..... 2½ pounds  
 Red lead..... 12 pounds  
 Rosin oil..... 1 quart  
 Sodium silicate..... 1½ gallons  
 Mix and strain.

**Paint for Linoleum.**

If the linoleum be much worn paint it one or two coats with some desirable floor paint. For a varnish-like lustre the following may be employed, whereby the paint becomes even much more durable: Dissolve 2 parts of shellac in 8 parts of alcohol of about 80 per cent, and add to it ¼ of a part of camphor. When the whole has been completely dissolved it can be filtered or strained through a cloth to separate the suspended impurities. With this lac the floor is painted over once or twice as may be required. By the application of the lac, the paint adheres much better, and it is not so easily worn as though it were directly exposed; and when the lac has been partially removed, all that

is necessary is to renew the simple application of the varnish.

**Paint to Renovate Linoleum.**

Yellow wax..... 5 ounces  
 Oil of turpentine..... 11 ounces  
 Varnish ..... 5 ounces

Mix at a gentle heat.

First wash the linoleum with soap and water; when dry, apply the above with a woolen rag.

**Luminous Paint.**

Calcined oyster shells....100 parts  
 Quicklime .....100 parts  
 Sulphur, fused.....100 parts  
 Calcined sea-salt..... 25 parts

This mixture is carefully heated to redness in a covered crucible, and constitutes, when cold, the carrier of light.

**Blue Luminous Paint.**

Forty-two parts varnish, 10.2 parts prepared barium sulphate, 6.4 parts ultramarine blue, 5.4 parts cobalt blue and 46 parts luminous calcium sulphide.

**Gray Luminous Paint.**

Forty-five parts of varnish are mixed with 6 parts prepared barium sulphate, 6 parts prepared calcium carbonate, 0.5 part ultramarine blue, 6.5 parts gray zinc sulphide.

**Green Luminous Paint.**

Forty-eight parts varnish are mixed with 10 parts prepared barium sulphate, 8 parts chromium oxide green, and 34 parts luminous calcium sulphide.

**Orange Luminous Paint.**

Forty-six parts varnish are mixed with 17.5 parts prepared barium sulphate, 1 part Indian yellow, 1.5 parts prepared madder lake, and 38 parts luminous calcium sulphide.

**Red Luminous Paint.**

Sixty parts varnish are mixed with 8 parts prepared barium sulphate, 2 parts prepared madder lake, 6 parts prepared realgar (red arsenic sulphide) and 30 parts luminous calcium sulphide, and treated the same as for white paint.

**Violet Luminous Paint.**

Forty-two parts varnish, 10.2 parts prepared barium sulphate, 2.8 parts ultramarine violet, 9 parts cobaltous arsenate, and 36 parts luminous calcium sulphide.

**Yellow Luminous Paint.**

Forty-eight parts varnish are mixed with 10 parts prepared barium sulphate, 8 parts barium chromate, and 34 parts luminous calcium sulphide.

**Paint for Sample Stoves.**

Paint the stove with paint made of powdered black lead and linseed oil, and polish in the ordinary way when dry. It may be left out in all kinds of weather without injury to the polish.

**Paint for Shingle Roofs.**

There is a paint made for shingle roofs of which the principal ingredients are coal tar, gypsum, benzine, and coloring; it is applied cold and dries quickly. One barrel coal tar, 10 pounds asphaltum, 10 pounds ground slate, 2 gallons dead oil. Add the dead oil after the other ingredients have been mixed by aid of heat.



**Paint for Damp Walls.**

Linseed oil, boiled.....	5 parts
Oil of turpentine.....	5 parts
Rosin .....	5 parts
Chalk .....	15 parts

Mix and use as paint.

**Stencil Paints.**

Shellac, 2 ounces; borax, 2 ounces; water, 25 ounces; gum arabic, 2 ounces; lampblack, a sufficiency. Boil the borax and shellac in water till they have dissolved, and withdraw from the fire. When the solution has become cold, complete 25 ounces with water, and add lampblack enough to bring the preparation to a suitable consistence. When it is to be used with a stencil, it must be made thicker than when it is to be applied with a marking brush. The above gives a black ink. For red, substitute Venetian red for lampblack; for blue, ultramarine; and for green, a mixture of ultramarine and chrome yellow.

**Paint for Copper.**

Alum .....	1 ounce
Warm water.....	1 quart
Flour, a sufficiency.	
Rosin .....	¼ ounce
Sugar of lead.....	½ ounce

Dissolve the alum in the water, add flour to make a cream, add the rosin and lead. Mix well.

**Paint for Iron, Exposed to Heat, White.**

Waterglass .....	1 pint
Water .....	2 pints
Barium sulphate (or white lead) .....	1 pound

Mix.

**Paint for Iron, Exposed to Heat, Blue.**

Waterglass .....	1 pint
Water .....	2 pints
Ultramarine .....	½ pound

Mix.

**Paint for Iron, Exposed to Heat, Brown.**

Waterglass .....	1 pint
Water .....	2 pints
Cadmium oxide (or sienna) .....	½ pound

Mix.

**Paint for Iron, Exposed to Heat, Green.**

Waterglass .....	1 pint
Water .....	3 pints
Chromic oxide.....	½ pound

Mix.

**Paint for Iron, Exposed to Heat, Red.**

Waterglass .....	1 pint
Water .....	3 pints
Chrome red.....	½ pound

Mix.

**Paint for Iron, Exposed to Heat, Yellow.**

Waterglass .....	1 pint
Water .....	3 pints
Barium chromate (or ochre) .....	½ pound

Mix.

**Paint for Roofs and Roof Paper (Carbolineum).**

Rosin .....	3 pounds
Paraffin oil.....	15 pints
Rosin oil.....	1 pint

Mix and melt at a gentle heat.

**Paint for Roofs and Roof Paper.**

Rosin .....	2 pounds
Anthracene oil.....	10 pounds
Para rubber.....	¼ pound

Mix and dissolve at a gentle fire.

**Paint for Roofs, Colored.**

Any desired color (ultramarine, ochre, Venetian red, etc.), may be added to the paint prepared according to the above formula for carbolineum roofing, rubbing the color with a little paraffin oil, before stirring it into the paint.

**Paint for Roofs of Tar Paper, Etc.**

Distilled coal tar.....	7 pounds
Heavy mineral oil.....	1 pound
Rosin .....	2 pounds

Mix and melt at a gentle heat.

**Paint for Roofs of Tar Paper.**

Distilled coal tar.....	5 pounds
Asphaltum .....	1½ pounds
Mineral oil.....	1 pound
Fine dry clay.....	2½ pounds

Mix at a gentle heat.

**Paint for Bath Tubs.**

White lead.....	8 pounds
Linseed oil.....	1 pint
Varnish .....	7 pints

Mix and apply 2 or 3 coats. Any desired color may be added.

**Paint, Flexible, for Oilcloth and Linoleum.**

Soft soap.....	2 ounces
Water .....	12 ounces
Oil paint.....	6 pounds

Dissolve the soap in the water and work into the paint.

**Paint for Smokestacks and Stovepipes.**

Dissolve asphaltum in oil of turpentine at a gentle heat. Apply with brush.

**Paint for Trunks.**

Brown varnish.....	1 gallon
Mineral black.....	½ pound
Zinc sulphide.....	1 pound
Denatured alcohol.....	1 pint

Mix.

**LACQUERS, ETC,****Bookbinders' Lac.**

Shellac, in scales.....	4 pounds
Benzoin .....	1 pound
Sandarac .....	1 pound
Mastic .....	1 pound

Pulverize, and pour on:

Alcohol .....	20 pints
Oil of lavender.....	3 ounces

Mix and dissolve.

**Bookbinders' Lac, Colored.**

Sandarac .....	10 ounces
Mastic .....	5 ounces
Venice turpentine.....	4 ounces
Alcohol .....	3 pints
Pigment, q. s.	

Dissolve and filter.

(Dragon's blood, annatto, gamboge, fuchsin, or any of the aniline pigments, may be used.)

**Colorless Bookbinders' Lac.**

White shellac..... 10 ounces  
 Pulverize, and moisten with:  
 Ether ..... 3 ounces  
 Set aside until the mass has swelled. Then add:

Powdered mastic..... 5 ounces  
 Absolute alcohol..... 2 pints  
 Oil of lavender..... 2 ounces

Mix and set the mixture aside for several days, frequently agitating, then put in a cold place to allow the solution to settle. Decant and strain through a linen strainer.

**Colorless Lacquer.**

Dissolve  $2\frac{1}{2}$  ounces of shellac in 1 pint of alcohol, boil for a few minutes with 5 ounces of well burned and recently heated charcoal. A small portion of the solution should then be filtered, and, if not colorless, more charcoal should be added. When all color is removed, press the liquid through a piece of silk, and filter through paper.

**Plain Lacquer.**

Mastic ..... 1 ounce  
 Sandarac ..... 1 ounce  
 Elemi .....  $\frac{1}{2}$  ounce  
 Alcohol ..... 20 ounces

Mix, dissolve and strain.

**Universal Lacquer.**

Bleached shellac..... 1 ounce  
 Copal ..... 1 ounce  
 Mastic ..... 1 ounce  
 Powdered glass..... 2 ounces  
 Alcohol ..... 1 pint

Mix and macerate for 2 weeks, then add 1 dram of boric acid and filter.

**Lacquer for Brass.**

Turmeric ..... 1 ounce  
 Annatto .....  $\frac{1}{4}$  ounce  
 Spanish saffron.....  $\frac{1}{4}$  ounce  
 Shellac ..... 3 ounces  
 Alcohol ..... 16 ounces

Digest the first three ingredients with the alcohol for 24 hours, then dissolve the shellac in the liquid.

**Black Coating for Brass Objects.**

Dissolve 1.05 ounces copper carbonate, while being well stirred in 8.80 ounces of spirit of ammonia, 17.60 ounces of water being added to the solution. The brass objects should have been well polished with emery paper, and are fastened to brass or copper wires. They are plunged for a short time in the solution, and when completely blackened are rinsed in water. They are then dried in sawdust, and finally rubbed with oil varnish diluted with oil of turpentine. This black coating is said to be durable, and to stand exposure in the open air.

**Lacquer for Engravings.**

A varnish much employed for that purpose in Paris, consists of a solution of 2 parts dammar resin in 5 parts oil of turpentine. The mixture should be well shaken before it is applied.

**Lacquer for Brass.**

Shellac ..... 4 ounces  
 Dragon's blood..... 4 ounces  
 Annatto ..... 4 ounces  
 Gamboge ..... 4 ounces  
 Saffron ..... 1 ounce  
 Alcohol ..... 10 pints

Mix, macerate for two weeks with frequent agitation, and filter.

**Lacquer for Brass.**

Turmeric ..... 1 ounce  
 Shellac ..... 2 ounces  
 Sandarac ..... 2 ounces  
 Annatto ..... 2 ounces  
 Alcohol ..... 1 pint

Mix and macerate as directed in the preceding formula.

**Lacquer for Brass.**

Shellac ..... 3 ounces  
 Amber ..... 3 ounces  
 Gamboge ..... 2 ounces  
 Extract of red saunders...  $\frac{1}{2}$  ounce  
 Dragon's blood..... 1 dram  
 Saffron .....  $\frac{1}{2}$  dram  
 Alcohol ..... 3 pints

Mix and macerate as directed in the preceding.

**Lacquer for Brass.**

Gamboge .....  $\frac{1}{2}$  ounce  
 Aloes .....  $1\frac{1}{2}$  ounces  
 Shellac ..... 8 ounces  
 Alcohol ..... 1 gallon

Mix and macerate as directed in the above formulas.

**Lacquer for Brass.**

Shellac ..... 3 ounces  
 Gamboge ..... 1 ounce  
 Alcohol .....  $\frac{1}{2}$  pint

Mix and macerate as directed in the above formulas.

**Lacquer for Combmakers.**

Elemi ..... 1 ounce  
 Mastic ..... 1 ounce  
 Shellac ..... 5 ounces  
 Alcohol ..... 20 ounces

Mix and macerate as directed in the above formulas.

**Lacquer for Copper.**

Mastic ..... 8 ounces  
 Camphor ..... 6 ounces  
 Sandarac ..... 15 ounces  
 Shellac ..... 15 ounces  
 Alcohol .....  $2\frac{1}{2}$  pints

Mix and macerate as directed in the above formulas.

**Green Lacquer.**

Turmeric ..... 18 ounces  
 Shellac ..... 15 ounces  
 Sandarac ..... 1 ounce  
 Elemi ..... 3 ounces  
 Gamboge ..... 3 ounces  
 Denatured alcohol..... 3 gallons

Mix and expose to a gentle heat; strain and treat the sediment again with  $\frac{1}{2}$  gallons of denatured alcohol.

**Gold Lacquer.**

Seed lac..... 3 ounces  
 Turmeric ..... 1 ounce  
 Dragon's blood.....  $\frac{1}{4}$  ounce  
 Alcohol ..... 1 pint

Mix, dissolve and filter.

**Gold Lacquer.**

Ground turmeric..... 1 pound  
 Gamboge .....  $1\frac{1}{2}$  ounces  
 Gum sandarac.....  $3\frac{1}{2}$  ounces  
 Shellac, powdered.....  $\frac{1}{4}$  pound  
 Alcohol ..... 2 gallons  
 Turpentine varnish..... 1 pint

Mix, digest for a week, frequently shaking the mixture; then decant and filter.

**Gold Lacquer for Brass.**

Shellac .....	6 ounces
Amber .....	2 ounces
Gamboge .....	2 ounces
Sandalwood .....	$\frac{1}{2}$ dram
Dragon's blood.....	1 dram
Saffron .....	$\frac{1}{2}$ dram
Powdered glass.....	4 ounces
Alcohol .....	$2\frac{1}{2}$ pints

Mix, macerate for two weeks with frequent agitation, and filter.

**Gold Lacquer.**

Sandarac .....	1 ounce
Elemi .....	1 ounce
Shellac .....	1 ounce
Gamboge .....	2 drams
Dragon's blood.....	2 drams
Powdered glass.....	2 ounces
Turmeric .....	6 ounces
Saffron .....	$\frac{1}{2}$ dram
Alcohol .....	2 pints

Mix, macerate for two weeks with frequent agitation, then filter.

**Gold Lacquer.**

Shellac .....	$2\frac{1}{2}$ drams
Cutch .....	1 dram
Dragon's blood.....	$\frac{1}{2}$ ounce
Alcohol .....	20 ounces

Mix, macerate for two weeks with frequent agitation, then filter.

**Gold Lacquer.**

Shellac .....	1 ounce
Sandarac .....	1 ounce
Dragon's blood.....	1 dram
Gamboge .....	$\frac{1}{2}$ dram
Venice turpentine.....	1 ounce
Oil of turpentine.....	10 ounces

Mix. Dissolve on water bath and strain.

**Lacquer for Harness.**

Shellac, in scales.....	10 ounces
Sandarac .....	2 ounces
Venice turpentine.....	3 ounces
Gurjun balsam.....	3 ounces
Oil of turpentine.....	1 ounce
Alcohol .....	$2\frac{1}{2}$ pints

Set aside for several days; then add

Lampblack .....	1 ounce
Alcohol .....	5 ounces

Mix thoroughly.

**Holland Lacquer.**

Sandarac .....	1 pound
Mastic .....	1 pound
Amber .....	1 pound

Finely pulverize, and add

Dried silicious sand.....	1 pound
Venice turpentine.....	12 ounces
Linseed oil.....	1 pint
Oil of turpentine.....	4 pints

Mix. Allow to stand eight days in a warm place, frequently agitating. Set aside and either filter or decant the supernatant liquid.

**Tar Asphalt Lacquer for Iron.**

Thirty parts of West Indian copal, 30 parts of American pine rosin, 30 parts of mineral asphalt, 30 parts of tar asphalt, 5 parts yellow wax and 6 parts of Venetian turpentine. These ingredients are melted and uniformly mixed by stirring. If the mixing is properly done, the melted compound runs off the spatula in a cohesive, uniform, thick stream. The following are then added to the mixture while it is still moderately warm: 12 parts of rosin oil, 30 parts of linseed oil varnish, 30 parts of turpentine oil, and, finally, from 30 to 45

parts of benzine. If it be desired to make the lacquer thinly fluid, the quantity of benzine is increased. Painting must be several times renewed, the more often the finer the appearance.

**Lacquer for Iron.**

Asphaltum .....	10 ounces
Rosin .....	3 ounces
Lampblack .....	1 ounce
Petroleum .....	25 ounces

Mix, dissolve on water bath and strain.

**Lacquer for Iron.**

Amber .....	6 ounces
Oil of turpentine.....	6 ounces
Rosin .....	1 ounce
Asphaltum .....	1 ounce
Drying oil.....	3 ounces

Mix, dissolve on water bath and strain.

**Lacquer for Iron.**

Asphaltum .....	3 pounds
Shellac .....	$\frac{1}{2}$ pound
Oil of turpentine.....	1 gallon

Mix, dissolve and strain.

**Lacquer for Jewelers.**

Shellac .....	9 ounces
Gamboge .....	3 ounces
Amber .....	3 ounces
Dragon's blood.....	$\frac{1}{4}$ ounce
Saffron .....	1 dram
Sandalwood oil.....	2 drams
Alcohol .....	4 pints

Mix, macerate for two weeks with frequent agitation, and filter.

**Black Lacquer for Leather.**

Best shellac.....	1 ounce
Sandarac .....	2 drams
Mastic .....	1 dram

Dissolve in 12 ounces methylated spirit, and add  $\frac{1}{2}$  to 1 ounce pure Venetian turpentine. The solution is colored a deep black by adding nigrosin.

**Lacquer for Bottle Caps.**

Gamboge .....	1 ounce
Shellac .....	10 ounces
Oil of turpentine.....	1 ounce
Alcohol .....	3 pints

Mix, dissolve and filter.

**Lacquer for Bottle Caps.**

Gamboge .....	4 ounces
Dragon's blood.....	$\frac{1}{2}$ ounce
Extract of sandalwood....	$\frac{1}{2}$ ounce
Sandarac .....	8 ounces
Venice turpentine.....	2 ounces
Alcohol .....	1 gallon

Mix and macerate for two weeks with frequent agitation, then filter.

**Liquid Bottle Lac.**

Shellac .....	8 ounces
Alcohol .....	$1\frac{1}{2}$ pints
Ether .....	$\frac{1}{2}$ pint
Oil of turpentine.....	4 ounces

Mix, macerate for two weeks with frequent agitation, then filter.

**Colored Lac for Bottles, Etc.**

To color, the lacquer is prepared according to the preceding formula, use the following aniline dyes: Red, eosine; blue, phenol blue; black, nigrosine; green, aniline green; violet, methyl violet. Rub the color up with a little alcohol before adding to the lacquer.



**Lacquer for Microscopes and Mathematical Instruments.**

Turmeric .....	12 ounces
Dragon's blood.....	8 ounces
Sandarac .....	8 ounces
Elemi .....	5 ounces
Gamboge .....	5 ounces
Shellac .....	7 ounces
Powdered glass.....	1 pound
Alcohol .....	10 pints

Mix, macerate for two weeks, frequently agitating, then filter.

**Matt Lacquer.**

Sandarac .....	3 ounces
Mastic .....	1 ounce
Ether .....	2 pints
Benzine .....	10 to 20 ounces

Mix and dissolve. The more benzine is added, the coarser will be the grain.

**Lacquer for Sheet Metal.**

Asphaltum .....	5 ounces
Colophony .....	3 ounces
Turpentine varnish.....	10 ounces
Oil of turpentine.....	14 ounces

Mix, dissolve and strain.

**Lacquer for Silvered Articles.**

The parts are covered with the white of eggs and when dry, any of the brass or gold lacquers may be applied.

**Lacquer for Steel.**

Mastic .....	2 ounces
Camphor .....	1 ounce
Sandarac .....	3 ounces
Elemi .....	1 ounce
Alcohol .....	1 pint

Mix, macerate for two weeks, frequently agitating, then filter.

**Red Lacquer.**

Dragon's blood.....	8 ounces
Sandarac .....	16 ounces
Shellac .....	8 ounces
Annatto .....	16 ounces
Alcohol .....	1 gallon

Mix, macerate for two weeks, frequently agitating, then filter.

**Lacquer for Tin Plate.**

Turmeric .....	6 drams
Saffron .....	1 dram
Sandarac .....	3 drams
Canada balsam.....	3 drams
Mastic .....	3 drams
Alcohol .....	12 ounces
Oil of turpentine.....	2 drams

Mix, macerate for two weeks, frequently agitating, then filter.

**Lacquer for Tin Plate.**

Shellac .....	4 ounces
Red saunders.....	1 ounce
Turmeric .....	2 ounces
Alcohol .....	1 quart

Mix, macerate for two weeks, frequently agitating, then filter.

To color this lacquer, use the aniline colors described in the formula given above for "Colored Lac for Bottles".

**Transparent Lacquer.**

Sandarac .....	4 ounces
Gum turpentine.....	7 ounces
Oil of turpentine.....	28 ounces

Mix, and dissolve on a water bath.

**White Lacquer.**

Bleached shellac.....	60 parts
Manilla copal, freshly powdered .....	60 parts
Mastic .....	60 parts
Alcohol .....	1,000 parts

Digest with frequent agitation (adding 100 parts of powdered glass to aid solution) for a fortnight; then add 1 part of boracic acid, and filter.

**Lacquer for Zinc.**

Gamboge .....	1 ounce
Shellac .....	4 ounces
Annatto .....	1 ounce
Alcohol .....	1 pint
Venice turpentine.....	¼ ounce

Mix, macerate for two weeks with frequent agitation, then filter.

**Lacquer for Zinc, Dark.**

To 1 pint of lacquer prepared from the preceding formula, add ¼ ounce of dragon's blood, previously dissolved in a little alcohol and filtered.

**Zinc Coating for Enamel Painting.**

For coating zinc with a fine black surface on which enamel paintings may be executed, use the following: First, roughen the surface by rubbing with fine white sand. Prepare a bath of sixty-four parts of distilled water, two parts of copper nitrate, three parts of crystallized copper chloride, and eight parts of hydrochloric acid. Plunge the plate of zinc into the bath and let it remain for a few seconds; then wash in water and dry rapidly. The black surface that forms resists nitric acid, so that if a design is made upon zinc with the above liquid the plate can be etched, having the design in relief.

**Brown Bronzing Liquid for Copper and Brass.**

Copper acetate.....	5½ parts
Ammonium chloride.....	7 parts
Acetic acid.....	1 part
Water .....	100 parts

Mix and dissolve. The articles, having been previously heated, are coated repeatedly with the liquid until the desired color is obtained.

**Bronzing Fluid.**

Red aniline.....	50 grains
Violet aniline.....	50 grains
Alcohol .....	2 ounces
Benzoic acid.....	50 grains

Dissolve the aniline in the alcohol, in a bottle, by the aid of a water bath, add the benzoic acid, boil in the water bath 5 or 10 minutes, until the greenish color of the liquid has changed to a light brownish bronze. This fluid can be applied to metal, leather, wood or other surfaces.

**Gold Bronze.**

Melt 2 parts of pure tin in a crucible, and add to it, under constant stirring, 1 part of metallic mercury, previously heated in an iron spoon until it begins to emit fumes. When cold, the alloy is rubbed to powder, mixed with 1 part each of ammonium chloride and sublimed sulphur, and the whole inclosed in a flask or retort, which is embedded in a sand bath. Heat is now applied until the sand becomes red-hot, and this is maintained until vapors are no longer evolved. The vessel is then removed from the hot sand and allowed to cool. The lower part of the vessel contains the gold bronze as a shining gold-colored mass. In the upper part of the flask or retort will be found ammonium chloride and cinnabar.

**Bronzing Gun Barrels.**

The barrels and bodies of the guns are first scalded in a solution of soda for twenty minutes, and then washed in clean water. The following brownning-mixture is then applied:

Alcohol .....	5 ounces
Spirit of nitrous ether....	8 ounces
Tincture of iron.....	8 ounces
Nitric acid.....	4 ounces
Sulphuric acid.....	3 ounces
Copper sulphate.....	4 ounces
Water .....	1 gallon

The guns are then placed in a damp heat for about 1½ hours, when they are scalded again, and when cool the rust is scratched off. This process is repeated four times, and then the barrels are cleaned and oiled. The whole operation occupies about eight hours.

**Bronze Lacquer.**

Fuchsin .....	1 ounce
Methyl violet.....	½ ounce
Alcohol .....	12 ounces

Dissolve on a water bath and add  
Benzoin .....

Boil for 15 minutes on a water bath, strain and add enough alcohol to make the finished product measure 12 ounces.

**Bronzing Solution.**

Fuchsin .....	1 ounce
Aniline purple.....	½ ounce
Benzoic acid.....	½ ounce
Denatured alcohol.....	10 ounces

Dissolve the dyes, add the acid and proceed as directed in the preceding formula.

**Old Bronze Solution.**

Ammonium chloride.....	2½ ounces
Oxalic acid.....	1 dram
Diluted acetic acid.....	1 pint

Mix and dissolve. Apply with camel-hair brush till the right color is obtained.

**"Banana Oil" for Bronzing.**

Amyl acetate.....	1 pint
Acetone .....	1 pint
Benzine .....	1 pint
Pyroxylin .....	1 ounce

Mix. This mixture is very inflammable.

**Bronzing Powder.**

Copper powder is obtained by putting iron bars in a saturated solution of copper nitrate, when the metallic copper in the form of a powder is deposited.

**Silver Bronzing Powder.**

Melt together 1 ounce each of bismuth and tin, then add 1 ounce of quicksilver; when cool, reduce to a powder by trituration.

**Silver Bronze Powder.**

In a saturated solution of silver nitrate put sheets of pure copper, when the pure silver will be deposited in the form of a powder. Collect the powdered silver, wash and dry.

**Gold Bronze Powder.**

Gold leaf is ground with honey until perfectly fine. Then add water and allow the gold in the form of a metallic powder, to be deposited. Collect, wash and dry.

**Gold Bronze Powder.**

Melt 1 pound of tin and add ½ pound of mercury. Powder, when cool, and add 7 ounces sulphur and ½ pound ammonium chloride. Mix well.

**Gilding, to Improve.**

Alum, powdered.....	1 ounce
Common salt.....	1 ounce
Saltpetre, powdered.....	2 ounces
Distilled water.....	4 ounces

Mix and dissolve. This solution when applied much improves the color of gilt articles. To be used with a soft brush.

**Enamel for Carriage Tops.**

Asphaltum .....	150 parts
Boiled oil.....	3 parts
Oil of turpentine.....	33 parts
Benzine .....	20 parts

Melt the asphaltum in the oil and add thinners.

**Black Enamel for Bicycles.**

Dissolve in about 2 pounds of tar oil ½ pound of asphaltum and a like quantity of pounded rosin; mix hot in an iron kettle, care being taken to prevent any contact with the flame. When cold the varnish is ready for use. Apply with a common brush.

**STAINS FOR WOOD, WHITE-WASH, ETC.****Cheap Black Stain.**

Take dry lampblack, mix with benzine to the consistency of mush, add boiled milk and japan in equal parts sufficient to bind the paint. Stir well and put in soluble glass in proportion of 1 ounce to the quart. Stir again, and thin with water until it works well. The mixture should work on dry muslin without crawling or spreading, and flow on an old unplanned board as easily as water. If the paint spreads at the edges, use more japan and less oil. Muslin painted with this mixture will remain pliable, and will neither rot nor break.

**Extra Black Stain for Wood.**

Pour 2 quarts of boiling water over 1 ounce of powdered extract of logwood, and when solution is effected, 1 dram of yellow potassium chromate is added, and the whole well stirred. It is then ready for use as a wood stain, or for writing ink. When rubbed on wood it produces a pure black. Repeat with two, three or four applications till a deep black is produced.

**Black or Ebony Stain.**

Brush the wood first with a solution of iron sulphate, and then with a decoction of logwood or galls.

**Black Stain.**

Brush with a solution of silver nitrate (10 grains to 1 ounce) and expose to the sun.

**Black Stain.**

Nutgalls .....	1 ounce
Vinegar .....	½ pint
Steel filings.....	1 ounce

Put the nutgalls in the vinegar, heat to the boiling point, add the filings and let stand 3 hours. Strain.

**Black Stain.**

Water .....	1 gallon
Logwood .....	1 pound
Copperas .....	½ pound
Indigo blue.....	½ pound
Lampblack .....	2 ounces
Nutgalls .....	½ ounce

Boil the dry substances in the form of powder in the water on a slow fire. Let stand 3 hours and filter.

#### Black Stain.

Campeachy wood.....	8 pounds
Water .....	8 gallons
Copperas .....	1 pound
Nitric acid.....	2 ounces

Infuse the wood (in chips) in 7 gallons of water for 24 hours, dissolve the copperas in the remainder of the water, mix together and add the nitric acid. Stir well, let stand 24 hours and decant.

#### Black Stain.

(No. 1.)

Logwood .....	1 pound
Water .....	1 gallon
Alum .....	2 ounces

Make an infusion and decant.

(No. 2.)

Iron filings.....	1 pound
Vinegar .....	4 pints

Digest for 3 days and filter.

Paint the wood with No. 1, let dry and apply several coats of No. 2.

#### Black Stain.

Apply a strong decoction of logwood chips, and then apply vinegar in which nails have been immersed for some time.

#### Blue Stain for Wood.

Dissolve copper filings in nitric acid. Brush the wood with the solution, and then go over the wood with a hot solution of pearlsh (2 ounces to 1 pint of water) till it assumes a perfectly blue color.

#### Blue Stain for Wood.

Boil 1 pound of indigo, 2 pounds of logwood, and 3 ounces of alum in a gallon of water. Brush well over the wood until thoroughly stained.

#### Blue Stain for Wood.

Powdered indigo.....	1 ounce
Sulphuric acid.....	4 ounces

When effervescence ceases, add enough water to produce the desired color on a trial slip of wood.

#### To Stain Bricks Red.

Melt 1 ounce of glue in a gallon of water; then add a piece of alum as large as an egg,  $\frac{1}{2}$  pound of Venetian red, and 1 pound of Spanish brown. The redness or darkness is increased by using more red or brown. For coloring black, heat the bricks and dip in fluid asphaltum, or in hot linseed oil and asphalt.

#### Brown Stain for Wood.

To produce an imitation of oak, walnut and cherry tree wood, apply ordinary tincture of iodine diluted with alcohol, more or less of the iodine being used to produce the shade of brown desired. The stain should be applied with a broad brush or rag. After it has dried, the work should be polished. The ordinary French polish may be dispensed with by adding white shellac to the stain.

#### Brown Stain for Wood.

Apply a solution of potassium chromate. After drying, apply a decoction of logwood or fustic. By varying the strength of the solution and decoction, various shades of brown may be produced.

#### Brown Stain for Wood.

Sulphuric acid, diluted more or less, will stain wood brown. After drying, apply ammonia water.

#### Brown Stain for Wood.

Alkanet .....	$\frac{1}{2}$ ounce
Aloes .....	1 ounce
Dragon's blood.....	1 ounce
Alcohol .....	1 pint

Digest for 3 days and filter. After applying to the wood, polish with varnish.

#### Cedar Stain for Wood.

Catechu .....	2 drams <sup>9</sup>
Caustic potash.....	1 dram
Water .....	20 ounces

Dissolve the catechu and the potash in the water and boil the wood in the solution.

#### Cherry Stain for Wood.

Rain water.....	3 quarts
Annatto .....	4 ounces

Boil the mixture in a copper kettle until the annatto is dissolved, then put in a piece of potash the size of a walnut. Keep the mixture over the fire for half an hour longer, when it may be bottled for use.

#### Cherry Stain for Wood.

Alkanet root.....	15 grains
Aloes .....	30 grains
Dragon's blood.....	30 grains
Alcohol .....	1 pint

Mix and let stand; filter after 3 days. Paint the wood with diluted nitric acid (1:10), then apply the above stain.

#### Crimson Stain.

Ground Brazil wood.....	1 pound
Water .....	3 pints
Cochineal .....	$\frac{1}{2}$ ounce

Boil the Brazil wood with water for about an hour, strain, and add the cochineal; boil gently for half an hour, when the stain will be fit for use. This is first applied, and then the varnish, consisting of:

Alcohol .....	$\frac{1}{2}$ gallon
Sandarac .....	6 ounces
Mastic .....	3 ounces
Turpentine varnish.....	$\frac{1}{2}$ pint

Put the above in a tin can by the stove, frequently shaking, strain and keep for use. If the mixture is too hard, thin with more turpentine varnish.

#### Gray Stain for Wood.

Silver nitrate.....	1 ounce
Distilled water.....	50 ounces

Mix and dissolve. Paint the solution on the wood twice, then apply hydrochloric acid, and afterwards ammonia water. Polish with oil.

#### Green Stain for Wood.

Dissolve verdigris in vinegar and brush over with a hot solution until a proper color.

#### Green Stain for Wood.

Shellac .....	1 ounce
Borax, powdered.....	$\frac{1}{2}$ ounce
Aniline green (water-soluble) .....	1 dram
Water .....	10 ounces

Mix, boil together till dissolved, then filter and add water enough to make 10 ounces.

#### Mahogany Stain.

Madder .....	2 pounds
Logwood .....	1 pound
Soft water.....	1 gallon



Mix and boil one hour, then filter and apply warm. The stain can be darkened by applying, after drying, a solution of potassium carbonate (1 dram to a pint).

#### Mahogany Stain.

Dragon's blood..... 4 ounces  
Caustic soda..... 2 ounces  
Water ..... 10 ounces

Mix and boil, then make up to 40 ounces with water.

#### Mahogany Stain.

Alkanet ..... 1 ounce  
Aloes ..... 2 ounces  
Dragon's blood..... 2 ounces  
Alcohol ..... 1½ pints

Mix and macerate for a week, then filter.

#### Mahogany Stain.

Bismarck brown..... ½ ounce  
Alcohol ..... 1 pint

Mix and dissolve. Apply with a brush. When dry, polish with oil.

#### Mahogany Stain.

Dragon's blood..... 1 ounce  
Sodium carbonate..... 6 drams  
Alcohol ..... 20 ounces

Mix, dissolve and filter. Rub the wood with a solution of nitrous acid and then apply the above stain.

#### Oak Stain.

Mix powdered ochre, Venetian red, and amber, in glue size, in proportions to suit; or richer stain may be made with raw sienna, burnt sienna and Vandyke brown. A light yellow stain of raw sienna is very effective. Coffee is sometimes used to darken oak. If a very dark shade is desired, put on iron filings in a little sulphuric acid with a sponge, and allow to dry after each application.

#### Black Stain for Oak.

Immerse the wood for forty-eight hours in a hot saturated solution of alum, and then brush it over with a logwood decoction, as follows: Boil one part of the best logwood with 10 parts of water; filter through linen, and evaporate at a gentle heat until the volume is reduced one-half. To every quart of this solution add from 10 to 15 drops of a saturated solution of indigo. After applying this dye to the wood, rub the latter with a saturated and filtered solution of verdigris in hot concentrated acetic acid, and repeat the operation until a black of the desired intensity is obtained.

#### Oak Stain.

Vandyke brown..... 2½ ounces  
Ammonium carbonate..... 1 ounce  
Potassium bichromate.... ½ ounce  
Sodium carbonate..... ½ ounce  
Water ..... 2 pints

Mix. Boil for 10 minutes, then strain.

#### Oak Stain.

Bismarck brown..... ½ ounce  
Vandyke brown..... 1 ounce  
Nigrosin ..... 1 ounce  
Alcohol ..... 3 pints

Mix and dissolve.

#### Oak Stain.

Rub the wood with strong coffee several times, using a weak solution of copperas between each two applications.

#### Oak Stain.

Benzoin ..... 1 ounce  
Manilla ..... 8 pounds  
Rosin ..... 1¼ pounds  
Yellow aniline..... ¾ ounce  
Black aniline..... 1½ drams  
Castor oil..... ½ ounce  
Fusel oil..... ¾ pint  
Benzine ..... 1 pint  
Denatured alcohol..... 1 gallon

Mix, dissolve and strain.

#### Oak Stain.

A decoction of green walnut shells will bring new oak to any shade.

#### Orange Yellow Stains.

Nitric acid..... 1 ounce  
Rain water..... 3 ounces

Mix. Apply with brush. The more water is used the lighter the stain.

#### Purple Stain.

Logwood chips..... 1 pound  
Water ..... ¾ gallon  
Pearlash ..... 4 ounces  
Powdered indigo..... 2 ounces

Boil the logwood in the water till the full strength is obtained, then add the pearlash and indigo, and when the ingredients are dissolved, the mixture is ready for use, either warm or cold. This preparation gives a beautiful purple tint.

#### Rosewood Stain.

Red saunders..... 2 pounds  
Potassium carbonate..... 2 ounces  
Water ..... 4 pints

Macerate 8 days and filter.

A weak alum solution (1:16) applied while the wood is wet, brightens the color.

#### Rosewood Stain.

Rose aniline..... 1 dram  
Vandyke brown..... 1 ounce  
Alcohol ..... 1 pint

Mix and dissolve.

#### Rosewood Stain.

Logwood ..... ½ pound  
Water ..... 3 pints

Mix and boil down to 2 pints, then add:

Salt of tartar..... 1 ounce

Apply hot, at least three coats, or more.

#### Black Walnut Stain.

Logwood chips..... 1 pound  
Red saunders..... ½ pound  
Water ..... ½ gallon

Mix and boil over a fire until the coloring matters are completely extracted. Apply the mixture, while hot, to the wood with a brush. One or two coats is sufficient to produce a strong red color. Then take 1 gallon oil of turpentine and 2 pounds of asphaltum. Dissolve in an iron kettle on a stove, stirring constantly. Apply with a brush over the red stain to imitate rosewood. To make a perfect black, add a little lampblack. The addition of a small quantity of varnish with the oil of turpentine will improve it. This stain, applied to birchwood, gives as good an imitation of rosewood as on black walnut, the shade on the birch being a little brighter.

#### Walnut Stain.

Potassium permanganate.. 3 ounces  
Manganese sulphate..... 3 ounces  
Hot water..... 1 gallon

Mix and dissolve.

**Walnut Stain.**

Nigrosin .....	3 drams
Vandyke brown.....	4 drams
Bismarck brown.....	5 drams
Alcohol .....	2 pints

Mix and dissolve.

**Yellow Stain.**

Gamboge .....	1½ ounces
Alcohol .....	1 pint

Mix, dissolve and filter.

**Dry Stains, Ebony.**

Extract of logwood.....	1 pound
Water .....	2 pounds

Mix and boil; then add 1 ounce of ferric chloride. Evaporate to dryness, then powder.

**Dry Stain, Mahogany.**

Extract of Brazil wood....	1 pound
Caustic potash.....	1½ ounces
Water .....	1 pound
Eosin .....	1 ounce

Mix. Boil and evaporate to dryness.

**Dry Stains for Wood, Oak.**

Bismarck brown.....	1 pound
Caustic potash.....	1½ ounces
Water .....	2 pints

Mix, boil, filter, and evaporate to dryness.

**Dry Stain, Walnut.**

To the preceding formula for oak stain, add ¼ pound of extract of logwood before evaporating.

**Staining Pine.**

The following is a recipe for staining pine an ebony or black, that acids will not discolor. Boil 40 parts gallnuts, 4 parts rasped logwood, 5 parts iron sulphate and 5 parts verdigris with water. Strain through linen, apply the warm fluid to the wood, and give it 3 coats of a warm solution of 10 parts of iron filings in 75 parts vinegar. To prevent discoloration of the stained wood by acids, polish the surface with paraffin.

**Cherry Stain for Pine or Whitewood.**

Mix in a bottle 15 grains alkanet root, 30 grains aloes, 30 grains powdered dragon's blood, and 500 grains 90 per cent alcohol; cover with a bladder tied tightly over mouth, and shake it occasionally. In 3 or 4 days it can be filtered, and will be ready for use. Mordant the wood with dilute nitric acid, allow the wood to dry, and then apply the stain. Try some pieces of wood first to see if it answers the purpose.

**Stain for Inside of Drawers.**

Alcohol .....	2 pints
Powdered gamboge.....	3 ounces
Ground turmeric.....	6 ounces

Mix and steep to obtain full strength, then strain through muslin. Apply two coats to the wood with a fine sponge, sandpaper when dry, and then apply varnish or French polish.

**Floor Stain for Soft Wood.**

Glue .....	1 pound
Water .....	10 pints
Potassium dichromate....	½ ounce
Aniline brown, water-soluble .....	1½ ounces

Dissolve the glue in the water by the aid of heat; add the other ingredients and apply lukewarm.

**Coating for Laboratory Floors.**

Heat together in a metal pot 4 parts chalk, 50 parts resin, 4 parts linseed oil, and 1 part native cuprous oxide; then stir in carefully 1 part sulphuric acid. A sort of mastic results, which may be applied hot, and when dry forms a varnish of stony hardness. It is as good as wax cloth.

**Floor Dressing (for Ball Rooms).**

Powdered boric acid.....	6 pounds
Hard paraffin.....	1 pound

Melt the paraffin and incorporate the boric acid.

This dressing may be perfumed to suit.

**Floor Dressing, Perfumed.**

Powdered boric acid.....	5 pounds
Terpineol .....	½ pound
Paraffin .....	1 pound
Oil of lavender.....	½ ounce
Oil of neroli.....	20 drops

Prepare like the preceding, adding the perfume last.

**Floor Dressing.**

Neatsfoot oil.....	1 pound
Cottonseed oil.....	1 pound
Petroleum .....	1 pound

Mix.

**Floor Dressing.**

Beeswax .....	2 pounds
Water .....	14 pints
Potassium carbonate.....	1 pound

Dissolve the potassium carbonate in 3 pints of boiling water, add the wax, and boil with stirring until the wax is emulsified; then add the remainder of the water.

**Floor Dressing.**

Paraffin oil.....	8 pints
Kerosene .....	1 pint
Lime water.....	1 pint

Mix well. Apply with a mop.

**Stain for Floor.**

Linseed oil.....	1 gallon
Spanish brown.....	1 pound
Powdered sienna.....	2 pounds
Litharge .....	1 ounce

Mix and heat to the boiling point, then add oil of turpentine 1 pint.

Apply with brush and polish next day with a wax cloth.

**Stain for Floor.**

Red oak bark.....	1 pound
Tobacco .....	1 pound
Copperas .....	¼ pound
Water .....	2 gallons

Boil together for ½ hour, then strain. Apply the strained liquid with brush and when dry mop with weak lye water.

**Wood Filler.**

Starch .....	12 parts
Heavy spar.....	12 parts
Siccative .....	2 parts

Oil of turpentine, a quantity sufficient.

Mix to the consistency of ordinary varnish. For dark woods add up to 1 part by weight of umber. Apply the filler with a medium stiff brush. When the coat, at first lustrous, becomes dull, remove everything from the surface by rubbing across the grain of the wood with a piece of felt or strong leather fastened to a piece of wood. Allow the prepared wood to dry eight hours, then rub thoroughly with glass paper, when it is ready for polishing.

**Wood Filler.**

Whiting .....	1 pound
Plaster of paris.....	1 pound
Pumice, powdered.....	1 pound
Litharge .....	1 pound
Boiled linseed oil,	
Oil of turpentine, of each equal parts,	
enough to make the desired consistency.	

Japan drier and coloring matter may be added, as desired.

**Wood Filler Polish.**

Shellac .....	2 drams
Gum benzoin.....	2 drams
Poppy oil.....	2 drams
Alcohol .....	8 ounces

Mix and dissolve. Strain. To be used after rubbing in the filler.

**Wood Filler, Cement for Holes in Wood.**

Rosin .....	1 pound
Oil of turpentine.....	1 pound

Melt on water bath and add burnt ochre to produce the desired colors.

**Wood Filler, for Holes in Wood.**

Make a weak glue (1:16) and mix with sawdust of the same wood, to form a thick paste. Fill up the holes and polish with oil varnish.

**Wood Filler, for Holes in Wood.**

Rosin .....	1 ounce
Yellow wax.....	1 ounce
Venetian red.....	1 ounce

Melt rosin and wax on a water bath and then add the Venetian red. Apply hot.

**Wood Filler, for Holes in Wood.**

Slaked lime.....	1 pound
Rye flour.....	2 pounds
Linseed oil varnish, enough to make a	
paste.	

Any desired color may be added.

**Wood Putty.**

Litharge .....	1 ounce
Plaster of paris.....	2 ounces
Glue .....	1 ounce
Cement .....	4 ounces
Sawdust .....	2 ounces
Casein .....	5 ounces
Slaked lime.....	3 ounces
Water .....	2½ pints

Dissolve the glue in the water. Mix the powders and then work in the solution of glue.

**Wood Filler for Soft Wood.**

Slaked lime.....	1 ounce
Hydrochloric acid.....	2 ounces
Casein .....	2 ounces
Water .....	1 pint

Mix thoroughly. Should be prepared just before using.

**Wood Filler for Soft Wood.**

Slaked lime.....	5 ounces
Sawdust .....	4 ounces
Glue .....	2 ounces
Water .....	14 ounces

Dissolve the glue in the water and add the lime and sawdust. Prepare just before using.

**Wood Filler.**

Gypsum .....	5 ounces
Yellow ochre.....	3 ounces
Glue .....	2 ounces
Water .....	14 ounces

Prepare as directed in the preceding.

**Wood Filler.**

Sawdust of the same kind of wood as that to be filled is made into a paste by kneading with linseed oil varnish.

**Wood Filler.**

Make a paste of—

Flour .....	1 pound
Water .....	3 quarts
Alum .....	2 ounces

Soak torn newspapers in the paste, while hot, until an adhesive mass results.

**Wood Filler, for Hard Wood.**

Boiled linseed oil.....	1 quart
Oil of turpentine.....	3 quarts
Corn starch.....	5 pounds
Japan .....	1 quart
Calcined magnesia.....	2 ounces

Mix thoroughly.

**Wood Filler, for Hard Wood.**

Whiting .....	6 ounces
Japan .....	½ pint
Boiled linseed oil.....	½ pint
Oil of turpentine.....	½ pint
Corn starch.....	1 ounce

Mix well. Coloring matter may be added, as desired.

**To Stain Marble.**

Marble may be stained different colors by using the following substances: Blue, solution of litmus; green, wax colored with verdigris; yellow, tincture of gamboge or turmeric; red, tincture of alkanet or dragon's blood; crimson, alkanet in turpentine; brown, tincture of logwood; gold, equal parts of verdigris, ammonium chloride and zinc sulphate, in fine powder. The marble need not be highly polished but should be perfectly smooth, and ready to receive the highest finish before the stain is applied. The longer the stain is left in contact, the better the result.

**Simple Dead Finish.**

The following is a simple, but not very solid, dead finish for walnut: Take equal parts of burnt umber and finely ground pumice stone; mix them together. Apply with a woollen rag or haircloth dipped in raw or boiled linseed oil. Clean with soft old cotton rags. The longer and harder the rubbing, the better the results. The walnut need not be filled or oiled.

**To Renovate Gilt Frames.**

Apply with a camel-hair brush a gum arabic solution to which has been added a gold bronze having the color of the frame. Before mixing with the gum water, the bronze must be washed with water until it runs off perfectly clear. If one application does not suffice, it may be repeated until the spot entirely disappears. One coat must dry before another is applied.

**Gold Lustre for China Painting.**

Dissolve 1 dram gold in ¾ ounce nitro-hydrochloric acid, or simply dissolve this weight of chloride of gold in water. Add 6 grains metallic tin, and enough of the same acid, if required, to dissolve it. Pour, with constant stirring, into a mixture of ½ dram balsam of sulphur and 20 grains oil of turpentine. As the mixture stiffens, add ½ dram oil of turpentine and mix. More gold gives a brighter effect; tin inclines it to a violet tinge. Balsam of sulphur is made by boiling together in a covered vessel 1 part flowers



of sulphur and 4 parts linseed oil until the mass thickens.

#### Waterproof Liquid.

India rubber, in fragments, 1 ounce; boiled oil, 1 pint; dissolve by heat, carefully applied, then stir in of hot boiled oil 1 pint, and remove the vessel from the fire.

#### Waterproof Liquid.

Boiled oil, 1 pint; beeswax and yellow rosin, of each 2 ounces. Melt them together.

#### Waterproof Liquid.

Salad oil, 1 pint; mutton suet,  $\frac{1}{4}$  pound; white wax and spermaceti, of each 1 ounce. Melt together.

#### Waterproof Liquid.

Carbon disulphide, 2 ounces; gutta-percha,  $\frac{1}{2}$  ounce; asphaltum, 2 ounces; brown amber,  $\frac{1}{2}$  ounce; linseed oil, 1 ounce. Dissolve the gutta-percha in the carbon disulphide, and the asphalt and amber in the oil, and mix well.

#### Waterproof Liquid.

Rosin .....	1 pound
Solution of sodium silicate .....	4 pints
Water .....	6 pints

Mix and melt altogether, stirring till homogeneous, then strain. Equal parts of linseed oil may be added, if an oily liquid is desired.

#### To Kill Grease Spots.

Before painting, wash the parts with salt-petre, or very thin lime whitewash. If soap-suds are used they must be washed off thoroughly, as they prevent the paint from drying hard.

#### Putty for Polished Wood.

Melt a small quantity of beeswax, and while in a liquid form mix with whiting; as it becomes thick, add boiled oil until it is of the desired consistency. In using, sheet the wood over solid. Let it stand until the next day, when it can be removed by using sandpaper. It is cheaper and easier than shellac, and can be levelled much sooner, leaving nothing but the pores of the wood filled, which is better than having the wood all stained with the shellac.

#### To Soften Hard Putty.

Take 1 pound of pearlash and 3 pounds of quicklime; slake the lime in water, then add the pearlash, and make the whole about the consistency of paint. Apply to the putty and let it remain for 12 hours, when the putty will be so softened that the glass may be readily removed.

#### To Soften Hard Putty.

Apply heat. An old, flat file, or, better still, a soldering iron, made red hot and passed over the putty softens it at once, so that the broken glass may be removed and the putty scraped away with the fingers or an old case-knife.

#### Varnish Brushes.

Should the varnish brush drop to the floor or become soiled, clean out well in varnish.

Fill with varnish and place in the keeper, and in time the dust will settle to the bottom. By cleaning with turpentine, which is very volatile, the dust and dirt are drawn up to the tin of the brush, and will work out when used again.

#### To Prevent Paint Brushes From Freezing.

Add a little glycerin to the water in which the brushes are suspended, which will prevent freezing, and also prevent the paint from drying if not well washed from the brush before using.

#### To Protect Stovepipe.

Asphaltum .....	2 pounds
Boiled linseed oil .....	1 pint
Oil of turpentine .....	2 quarts

Fuse the asphaltum in an iron pot, boil the linseed oil, and add while hot. Stir well and remove from the fire. When partially cooled add the oil of turpentine.

#### To Protect Polished Metallic Surfaces.

A protective ointment for polished steel knives, or other polished surfaces, is prepared by melting together the following:

Resin .....	1 ounce
Talc, in powder .....	12 ounces
Lard .....	6 ounces
Yellow wax .....	3 ounces
Olive oil .....	3 ounces
Oil of turpentine .....	3 ounces

Mix the resin, lard, wax and oil, and melt at a low temperature. When melted, stir in the talc, and, after removing from the fire, add the turpentine, with constant stirring.

#### Imitation Ground Glass.

Sandarac .....	18 drams
Mastic .....	4 drams
Ether .....	24 ounces
Benzine .....	16 to 18 ounces

Dissolve. The above mixture to be painted on the glass.

#### Imitation Frost Crystals.

Dissolve 456 grains of lead nitrate in 6 fluid ounces of water. If the solution is turbid, filter through paper. Place the solution on a table where it is intended to remain, and drop into it 200 grains of ammonium chloride in long fibrous crystals. Small crystals of lead chloride form and ascend through the denser liquid, presenting the appearance of an inverted snowfall. When the lead is all precipitated, the crystals of lead chloride begin to descend as a genuine miniature snow-storm, forming grotesque masses resembling a winter's landscape. If the vessel containing the crystals be not disturbed, it often preserves its beauty for a week or two.

Specimens and other small objects may be coated with crystals by suspending them in a solution of 18 ounces of alum to the pint of water. Dissolve the alum in the water by the aid of heat, and suspend the specimen in the solution by means of a small thread, or twine from a lath or stick placed horizontally across the top of the jar into which the solution has been poured. The process is best conducted in a cool situation.

#### For Permanently Obscuring Glass.

Dip a piece of flat marble into glass cutter's sharp sand, moistened with water; rub over the glass, dipping frequently in sand and water. If the frosting is required very fine, finish off with emery and water. As a temporary frosting for windows, mix together a strong hot solution of Epsom salt and a clear solution of gum arabic; apply warm. Or use a strong solution of sodium sulphate, warm, and when cool, wash with gum water. Or daub the glass with a lump of glazier's putty, carefully and uniformly, until the surface is equally covered. This is an excellent imitation of ground glass, and is not disturbed by rain or damp.

**Kalsomining Fluid for Walls.**

White glue.....	1 pound
White zinc.....	10 pounds
Paris white.....	5 pounds
Water, sufficient.	

Soak the glue over night in 3 quarts of water, then add as much water again, and heat on a water bath until the glue is dissolved. In another pail put the two powders and put on hot water, stirring all the time, until the liquid appears like thick milk. Mingle the two liquids together, stir thoroughly, and apply to the wall with a whitewash brush.

**Kalsomine.**

Sodium carbonate.....	1 pound
Linseed oil.....	4 pints
White glue.....	1½ pounds
Whiting .....	20 pounds
Hot water, sufficient.	

Boil the sodium carbonate and linseed oil with 2 pints of water till saponified. Soak the glue in a pail of water, stir till dissolved. Mix the two solutions and stir in the whiting, a little at a time, adding hot water as may be necessary to produce the right consistency.

**Size for Kalsomine.**

Shellac .....	8 ounces
Sal soda.....	4 ounces
Hot water.....	1 gallon

Mix and boil till dissolved.

**Size for Kalsomine.**

White glue.....	½ pound
Alum .....	¾ pound
Water .....	2 gallons

Dissolve the glue in the water and add the alum. Bring to the boiling point.

**Whitewash.**

Lime, clean and well burnt	6 quarts
Spanish whiting, or powdered burnt alum.....	4 ounces
White sugar.....	16 ounces
Rice flour.....	3 pints
Glue, of good quality....	16 ounces
Water, boiling.....	5 gallons

Slake the lime in a vessel of about 10 gallons' capacity, with hot water, keeping the vessel covered to retain the steam, and pass through a sieve to clear of coarse particles. Make up the rice flour to a thick paste and boil well, and dissolve the glue in water over a water bath; then mix the liquids with the remainder of the water, and add the whiting or alum and sugar.

The mixture should be applied warm to outdoor surfaces, and cold indoors. It is stated that a coating of this wash will retain its brilliancy for many years.

**Whitewash, Waterproof.**

Mix 3 parts of pulverized silicious rock (quartz), 3 parts coarsely powdered marble, or 3 parts coarsely powdered sandstone, 2 parts burned kaolin, or fireclay, and 2 parts of freshly burned lime, still warm. Repeated wettings of this mixture form a silicate which becomes, if allowed to dry and solidify, like a stone. The four constituents mixed together give the ground color, to which any pigment (that can be used with lime) is added. It is applied quite thickly to the wall, or other surface. Let dry one day and the next day frequently cover with water, which makes it waterproof. This wash can be cleansed with water without losing any of its color; on the contrary, each time it gets harder, so that it can even be brushed, while its

porosity makes it look soft. The wash, or kalsomine, can be used for ordinary purposes as well as for the finest painting. A so-called fresco surface can be prepared with it in the dry way.

**Whitewash Powder.**

Alum, powdered.....	1 pound
Borax, powdered.....	1 pound
Gum arabic, powdered....	2 pounds
White dextrin, powdered.	4 pounds
Plaster of paris, powdered	16 pounds
Zinc white, powdered.....	16 pounds
Paris white.....	56 pounds

Mix well and pass through a sifter. Put up in 1 pound packages. Direct to use a pound with a pint of boiling water, adding at once water enough to bring to a suitable consistency. Any desired color may be added before mixing with water.

**Whitewash, to Color.**

Give the desired color by adding small quantities of lampblack, brown sienna, ochre, ultramarine, aniline red, or other coloring matter.

**Whitewash, to Prevent from Rubbing off.**

Alum added to whitewash (1 ounce to 1 pound) will prevent whitewash from rubbing off.

**Whitewash for Fences.**

To 1 gallon of ordinary whitewash add ¼ pint molasses and ½ pound of table salt.

**Whitewash for Fences.**

Quicklime .....	10 pounds
Common salt.....	½ pound
Zinc sulphate.....	¾ pound
Milk .....	2 quarts

Slake the lime and add the other ingredients, dissolved in water.

**Whitewash, Incombustible.**

Slake lime in the usual way. After straining use:

Milk of lime (slaked and strained) .....	5 gallons
Rock salt.....	1 quart
Water .....	1 gallon
Alum .....	1 pound
Copperas .....	½ pound
Potash .....	¾ pound
Fine sand.....	4 pounds
Coloring, as desired.	

Mix together, stir till dissolved and thin to suitable consistency with water.

**Whitewash, to Keep.**

Keep the whitewash under a layer of water in a covered vessel. Add water occasionally. If the whitewash is exposed to the air, it will soon spoil.

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**VARNISHES.**

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**Anatomical Varnish.**

Mastic .....	50 parts
Sandarac .....	130 parts
Balsam of copaiba.....	5 parts
Camphor .....	5 parts
Gum turpentine.....	12 parts
Ether .....	10 parts
Absolute alcohol.....	400 parts

Mix and stand in a warm place until a varnish is formed.

**Amber Varnish.**

Pale amber..... 1 pound  
 Linseed oil..... 2½ pints  
 Oil of turpentine..... 5 pints  
 Mix and dissolve.

**Amber Varnish.**

Amber ..... 4 ounces  
 Boiled linseed oil..... 1 quart  
 Mix and dissolve by heat.

**Amber and Elemi Varnish.**

Amber ..... 4 ounces  
 Elemi ..... 1 ounce  
 Venice turpentine..... 1 ounce  
 Oil of turpentine..... 12 ounces  
 Mix and dissolve.

**Aniline Varnishes.**

These are very useful for coloring. They are alcohol varnishes and are made by dissolving shellac or sandarac in alcohol and adding the desired aniline color, previously dissolved in alcohol.

**Aniline Varnishes with Collodion.**

In place of alcohol varnish, made as directed in the preceding formula, collodion may be used as a vehicle to carry the color.

**Asphalt Varnish.**

Mix one part of asphaltum with 4 parts of coal tar by the aid of heat. This mixture may then be dissolved in linseed oil or oil of turpentine, or both, as desired.

**Varnish for Bamboos.**

A varnish prepared by dissolving 3 ounces white shellac in 10 fluid ounces of methylated spirit, applied to the bamboo with a camel-hair brush, will give a beautiful transparent coating, while showing the natural color of the wood.

**Basket Varnish.**

Orange shellac..... 8 ounces  
 Yellow resin..... 1 ounce  
 Benzoin ..... ¼ ounce  
 Bismarck brown..... ¼ ounce  
 Methylated spirit..... 1½ pints  
 Vegetable naphtha..... ½ pint

Mix, shake till dissolved.

**Basket Varnish, Brown.**

Orange shellac..... 1 pound  
 Copal ..... 1 pound  
 Rosin ..... 2 pounds  
 Denatured alcohol..... ½ gallon

Mix and dissolve.

**Black Varnish for Coating Bottles.**

Asphalt and boiled linseed oil, equal parts, are heated for one hour over a naked fire to about 200° C. (392° F.); then a sufficient quantity of lampblack, previously triturated with oil of turpentine, is added, to make a mixture, which, when mixed with one-fourth or one-third its volume of oil of turpentine, will cover well. Usually, one coat is sufficient; in special cases, two coats may be required. Sometimes it is desirable to be able to see the height at which the liquid in the bottle is standing. This may be accomplished by leaving a small round spot on either side uncoated. The bottom of the bottle is likewise left unvarnished.

**Black Varnish.**

Shellac ..... 1 pound  
 Rosin ..... 10 ounces  
 Lampblack ..... 2 ounces  
 Alcohol ..... 4 pints  
 Mix well, shaking often. Shake before using.

**Dull Black Varnish.**

Make up the varnish according to the preceding formula, using oil of turpentine in place of alcohol.

**Black Varnish.**

Amber ..... 1 pound  
 Linseed oil..... ½ pint  
 Black rosin..... 3 ounces  
 Asphaltum ..... 3 ounces  
 Oil of turpentine..... 1 pint

Melt the first 4 ingredients, mix, and when nearly cool, stir in the oil of turpentine.

**Black Varnish for Cycles.**

Asphalt ..... 2 pounds  
 Linseed oil..... 1 pint  
 Oil of turpentine..... 4 pints

Mix the oils, warm the mixture and dissolve in it the asphalt. Let stand for a week and decant.

**Black Varnish.**

Shellac ..... 4 ounces  
 Rosin ..... 3 ounces  
 Lampblack ..... ½ ounce  
 Alcohol ..... 1 pint

Dissolve the shellac and rosin in the alcohol, strain, and then add the lampblack.

**Body Varnish.**

Gum copal..... 4 pounds  
 Linseed oil..... 1 gallon

Boil for 5 hours, and when nearly cool, add:  
 Oil of turpentine..... 2 gallons

Mix.

**Bookbinders' Varnish.**

Alcohol, 90 per cent, 3 pints; sandarac, 8 ounces; mastic, 2 ounces, in drops; shellac 8 ounces, and Venice turpentine, 2 ounces. Dissolve by cold digestion and frequent agitation. Apply lightly on the book with a piece of cotton wool, a small sponge, or a brush.

**Bookbinders' Varnish.**

Mastic, in drops, 6 ounces; coarsely pounded glass, separated from the dust by a sieve, 3 ounces; 90 per cent alcohol, 32 ounces. Place the ingredients in a sand bath over a fire and let them boil, stirring them well. When thoroughly mixed introduce 3 ounces spirit of turpentine, boil for half an hour, remove from the fire, cool, and strain through cotton cloth.

**Bookbinders' Varnish.**

Rosin ..... 1 pound  
 Shellac ..... 4 ounces  
 Alcohol ..... 5 pints  
 Dissolve and add kaolin, 1 ounce, shake and filter.

**Gold Varnish for Bottle Caps.**

Gamboge ..... 40 grams  
 Dragon's blood..... 5 grams  
 Extract of sandalwood... 5 grams  
 Sandarac ..... 75 grams  
 Venice turpentine..... 25 grams  
 Alcohol (95 per cent)..... 900 grams

Mix, dissolve by the aid of heat, and filter.



**Bookbinders' Varnish.**

Venice turpentine..... 1 pound  
 Light shellac.....2½ pounds  
 Alcohol .....6½ pounds  
 Mix and dissolve.

**Bottle Cap Varnish.**

Shellac ..... 10 ounces  
 Gutta-percha ..... 1 ounce  
 Venice turpentine..... 1 ounce  
 Alcohol ..... 3 pints

Mix and dissolve by maceration and shaking; strain.

**Bottle Cap Varnish.**

Gamboge ..... 2 ounces  
 Shellac ..... 2 ounces  
 Venice turpentine..... 1 ounce  
 Alcohol ..... 20 ounces

Mix, dissolve and filter.

**Brass Varnish.**

Turmeric ..... 1 ounce  
 Saffron .....1½ drams  
 Alcohol ..... 1 pint

Make a tincture by maceration, then filter and add enough of alcohol to make 1 pint. In the resulting tincture, dissolve:

Gamboge ..... 1 ounce  
 Elemi ..... 3 ounces  
 Dragon's blood..... 1 ounce

When complete solution is effected, filter.

**Cartridge Box Varnish (Militairlack).**

Shellac ..... 2 pounds  
 Mastic ..... 2 ounces  
 Sandarac ..... 1 ounce  
 Venice turpentine..... 4 ounces  
 Castor oil..... 2 ounces  
 Alcohol ..... 9 pints

Let stand until dissolved; then add: Black aniline, quantity sufficient. Paris black, quantity sufficient.

Mix thoroughly.

**Chinese Varnish.**

Mastic ..... 10 ounces  
 Sandarac ..... 10 ounces  
 Gurjun balsam..... 1 ounce  
 Absolute alcohol..... 4 pints

Mix. Allow to stand several days and after the sediment has deposited, decant.

**Cabinet Varnish.**

Melt 2 pounds of fine gum copal and add slowly 12 ounces fine oil. When needed for use, thin with oil of turpentine (2 to 3 pints).

**Cabinet Varnish.**

Sandarac ..... 2 pounds  
 Boiled linseed oil..... 1 pound

Melt together and add:

Oil of turpentine..... 3 pints

Mix.

**Carriage Varnish.**

Gum copal..... 1 pound  
 Linseed oil, pure..... 2 pints  
 Oil of turpentine.....3½ pints

Mix and boil together for 4 hours.

**Carriage Varnish.**

Copal ..... 1 pound  
 Linseed oil..... 3 pints  
 Litharge ..... ½ ounce  
 Copperas ..... ½ ounce  
 Oil of turpentine..... 6 pints

Mix and boil.

**Carriage Varnish.**

A mixture of equal parts of the varnishes made according to the two preceding formulas, will give an excellent quick drying carriage varnish.

**Casein Varnish.**

Casein ..... 4 pounds  
 Solution of soap (10 per cent) .....½ to 1 pound  
 Slaked lime..... 1 pound  
 Oil of turpentine.....1 to 2 pounds

Mix the casein with the soap, add the lime, and gradually incorporate the oil of turpentine. Add water to attain the desired consistency.

**Celluloid Varnish.**

Celluloid chips..... 5 ounces  
 Ether ..... 1 pound  
 Acetone ..... 1 pound  
 Amyl acetate..... 1 pound

Mix and dissolve.

**Celluloid Varnish.**

Celluloid ..... 1 pound  
 Camphor ..... 6 ounces  
 Ether ..... 3 pounds  
 Acetone ..... 3 pounds  
 Amyl acetate..... 3 pounds

Mix and dissolve.

**Celluloid Varnish.**

Celluloid chips..... 1 pound  
 Camphor ..... 1 pound  
 Alcohol ..... 10 pints

Mix and dissolve.

**Celluloid Varnish.**

Celluloid ..... 1 pound  
 Amyl acetate..... 1 pound

Mix and dissolve.

**Celluloid Varnish.**

Celluloid parings..... 1 ounce  
 Acetone ..... 10 ounces  
 Amyl acetate..... 10 ounces

Mix and dissolve.

**Celluloid Varnish.**

Pyroxilin ..... 1 ounce  
 Ether ..... 6 ounces  
 Alcohol ..... 18 ounces  
 Camphor .....2½ drams

Mix and dissolve.

**Chimney and Stovepipe Varnish.**

Asphaltum ..... 2 pounds  
 Linseed oil..... 1 pound  
 Oil of turpentine.....2 to 3 pints  
 Lampblack ..... 1 ounce

Melt the asphaltum with the oil; when nearly cool, stir in the oil of turpentine and lampblack, previously mixed.

**Coach Varnish.**

Asphaltum ..... 8 ounces  
 Lampblack ..... ¼ pound  
 Rosin ..... 8 ounces  
 Linseed oil..... 1 pint  
 Oil of turpentine..... 2 pints

Melt the first 4 ingredients and slowly incorporate the oil of turpentine.

**Black Varnish for Coaches.**

Asphaltum .....7½ pounds  
 Amber ..... 40 ounces  
 Resin .....7½ ounces  
 Boiled linseed oil.....1¼ pints

Melt together in an iron pot. When partly cool, add warm oil of turpentine,  $1\frac{1}{4}$  pints.

#### Black Varnish for Coal Buckets.

Asphaltum .....	$1\frac{1}{2}$ pounds
Lampblack .....	$\frac{3}{4}$ pound
Rosin .....	$\frac{3}{4}$ pound
Oil of turpentine.....	$1\frac{1}{2}$ quarts

Dissolve the rosin and asphaltum in the oil of turpentine; form a paste with lampblack and linseed oil, quantity sufficient, and mix with the asphaltum solution. Apply with a brush.

#### Coffin Varnish.

Rosin .....	6 pounds
Copal .....	2 pounds
Galipot (crude turpentine rosin) .....	1 pound
Alcohol .....	8 pints

Mix and melt together.

#### Coffin Polish.

Copal .....	1 pound
Shellac .....	5 ounces
Pale rosin.....	$1\frac{1}{2}$ pounds
Denatured alcohol.....	3 pints

Mix and dissolve.

#### Varnish for Confectionery, Chocolates, etc

Take half a pound or more of gum benzoin, put into a bottle and cover it with fourth proof alcohol, cork up tightly and let it digest for at least two weeks, shaking up once or twice a day, after which time pour gently off any quantity required for present use. It should be the thickness of thin syrup; if used too thick it is apt to appear in streaks on the work when dry; if too thick, dilute it with alcohol. This varnish is perfectly harmless and fragrant, resembling somewhat the odor of vanilla. It will also keep for years, growing better with age. It is a nice varnish for all kinds of chocolate work and candies; pulled and clear. It forms when dry, a thin, glossy film or skin over them, which prevents the access of the moisture of the surrounding atmosphere, and tends to keep them from becoming sticky indefinitely.

#### Copal Varnish.

Copal .....	1 pound
Linseed oil.....	2 pints
Oil of turpentine.....	$5\frac{1}{2}$ pints

Mix and boil together.

#### Copal Varnish.

Copal .....	3 ounces
Sugar of lead.....	$\frac{1}{2}$ ounce
Camphor .....	$\frac{1}{4}$ ounce
Rosin .....	$\frac{1}{4}$ ounce
Oil of turpentine.....	10 ounces
Linseed oil.....	6 ounces

Mix and boil together.

#### Copal Varnish.

Copal, powdered.....	4 ounces
Glass, powdered.....	4 ounces
Camphor, powdered.....	$\frac{1}{2}$ ounce
Alcohol .....	1 pint

Mix and heat on water bath, stirring constantly. When cool, decant.

#### Copal Varnish.

Powdered copal is to be covered with ammonia water until it swells up. Then add alcohol to produce a solution of the desired consistency.

#### Copal Varnish.

Copal .....	4 ounces
Oil of lavender.....	12 ounces
Camphor .....	$\frac{1}{4}$ ounce
Oil of turpentine, a sufficiency.	

Dissolve the copal and camphor in the oil on a water bath and add sufficient oil of turpentine to produce the desired consistency.

#### Crystal Varnish.

To Canada balsam, slightly heated, add oil of turpentine, and thin to the proper consistency.

#### Crystal Varnish.

Mastic .....	1 pound
Dammar .....	6 ounces
Turpentine .....	3 pints

Prepare as directed in the preceding formula.

#### Dammar Varnish.

Rosin .....	1 ounce
Sandarac .....	5 ounces
Dammar .....	8 ounces
Oil of turpentine.....	20 ounces

Mix and dissolve at a gentle heat.

#### Varnish for Drawings, Maps, etc.

A varnish for paper which produces no stains may be prepared as follows: Clear dammar resin is covered, in a flask, with four and a half to six times its quantity of acetone, and allowed to stand for fourteen days at a moderate temperature, after which the clear solution is poured off. Three parts of this solution are mixed with four parts of thick collodion, and the mixture allowed to become clear by standing. It is applied with a soft camel-hair or beaver-hair brush, in vertical strokes. At first the coating looks like a thin white film, but on complete drying it becomes transparent and shining. It should be laid on two or three times. It retains its elasticity under all circumstances, and remains glossy in every kind of weather.

#### Rapidly Drying Varnish.

Mix intimately colophony with thick milk of lime; after 24 hours dry by heat, and powder. This powder is used for preparing varnishes from soft resins as follows: Melt 100 parts of pine resin, add with constant stirring 10 to 15 parts of the above powder, continue to heat for 30 minutes, remove from the fire and add linseed oil, 25 to 50 parts, and oil of turpentine, 35 to 90 parts, according to the thickness desired.

#### Ebony Varnish.

Shellac .....	1 pound
Alcohol .....	5 pints
Lampblack .....	1 to 2 ounces

Dissolve the shellac in the alcohol and add the lampblack rubbed up with a little alcohol.

#### Ebony Varnish.

Shellac .....	1 ounce
Nigrosin .....	1 dram
Denatured alcohol.....	8 ounces

Prepare as directed in the preceding formula.

#### Electrical Varnish.

Orange shellac.....	4 ounces
Alcohol .....	2 to 3 pints

Mix and dissolve.

This varnish may be colored by adding the desired pigment, previously rubbed up in a little alcohol.

**Engravers' Varnish.**

Yellow wax..... 1 ounce  
 Mastic ..... 1 ounce  
 Asphaltum ..... ½ ounce  
 Mix, melt and drop into water, then form into balls.

**Engravers' Varnish.**

Tallow ..... 1 pound  
 Yellow wax..... 2 pounds  
 Melt together and form into sticks or balls.

**Ether Varnish.**

Pale copal, powdered..... 1 ounce  
 Ether ..... 4 ounces  
 Place in a flask and shake for half an hour. Then let the mixture settle and decant the clear liquid.

**Varnish for Fancy Work.**

The following preparation makes an excellent varnish for baskets or leather work: Add one-half pound of asphaltum to one pint of oil of turpentine. Let the varnish stand covered over night before using. It is also used for card-receivers and watch-receivers made from butternut shells, and cones and acorns.

**Varnish for Fans.**

Mastic ..... 1 ounce  
 Sandarac ..... 3 ounces  
 Venice turpentine..... 1 ounce  
 Alcohol ..... 1 pint  
 Mix and dissolve.

**Fatty Varnish, Painters'.**

Linseed oil (or poppy oil) 1 gallon  
 Oil of turpentine..... 1 pint  
 Sandarac ..... 1½ pounds  
 Mastic ..... ½ pound  
 Venice turpentine..... 2 ounces  
 Mix and dissolve at a gentle heat.

**Ferrotypes, Varnish.**

White shellac..... 1 ounce  
 Alcohol ..... 4 ounces  
 Mix and dissolve. Add a few drops of oil of lavender.

**Flexible Varnish.**

India rubber, 1 ounce; drying oil, 1 quart; dissolve by heat. A very tough varnish which dries in about 48 hours.

**Flexible Varnish.**

India rubber, in shavings, 1 ounce; rectified mineral naphtha or benzol, 1 pint; digest at a gentle heat in a closed vessel, and strain. This varnish never gets perfectly hard.

**Flexible Varnish.**

From India rubber (cut small), 1½ ounces; chloroform, ether (washed), or carbon disulphide, 1 pint; digest in the cold until solution is complete. Dries as soon as it is laid on. Pure gutta-percha may be substituted for India rubber.

**Flexible Varnish.**

Linseed oil, 1 gallon; dried white coperas and sugar of lead, of each 3 ounces; litharge, 8 ounces; boil, with constant stirring, until it strings well, then cool slowly, and decant the clear portion. If too thick, thin it down with quick drying linseed oil. Used for balloons, gas bags, etc.

**Frames, Varnish.**

Sandarac ..... 2 ounces  
 Mastic ..... 1 ounce  
 Shellac ..... 2 ounces  
 Venice turpentine..... ¾ ounce  
 Alcohol ..... 1 pint  
 Mix and heat on a water bath till dissolved, then add ½ ounce oil of turpentine and boil for one-half hour longer.

**Frames, Varnish for (Dead Ground).**

Dissolve 1 pound shellac in 2 pints of alcohol, add 1 pound of whitening and then enough alcohol to make 1 gallon.

**Glass Varnish.**

Dissolve 1 dram of powdered tragacanth in the white of an egg beaten up to a froth. Allow to stand for 24 hours.

**Glass Varnish.**

A solution of sodium silicate (waterglass) is often sold under this name.

**Ground Glass Varnish.**

Sandarac, powdered..... 90 grains  
 Mastic, powdered..... 20 grains  
 Ether ..... 2 ounces  
 Benzol ..... ½ to 1½ ounces  
 Mix and dissolve by shaking in a flask.

**Gold Varnish.**

Shellac ..... 1 pound  
 Sandarac ..... 3 ounces  
 Mastic ..... 3 ounces  
 Crocus ..... 1 ounce  
 Gamboge ..... 2 ounces  
 Alcohol ..... 1 gallon  
 Macerate the solids (in fine powder) in the alcohol for 8 days, then decant.

**Gold Varnish.**

Copal ..... 1 pound  
 Linseed oil..... 1 pint  
 Oil of turpentine..... 1½ pints  
 Melt, mix and boil. Add more oil of turpentine if needed to produce the desired consistency.

**Gold Varnish.**

Shellac ..... 1 ounce  
 Sandarac ..... 1 ounce  
 Mastic ..... 1 ounce  
 Gamboge ..... ¼ ounce  
 Dragon's blood..... ¼ ounce  
 Turmeric ..... ½ ounce  
 Gum turpentine..... 1 ounce  
 Alcohol ..... 1 pint  
 Macerate for 3 days, shaking often, then decant.

**Gold Moldings, Varnish for.**

Shellac ..... 2 ounces  
 Mastic ..... 2 ounces  
 Gamboge ..... 1 ounce  
 Alcohol ..... 14 ounces  
 Mix. Macerate 3 days and decant.

**Gold Moldings, Varnish for.**

Amber ..... 1 ounce  
 Dragon's blood..... 1 ounce  
 Gamboge ..... 1 ounce  
 Shellac ..... 4 ounces  
 Saffron ..... 20 grains  
 Saunders ..... 1 dram  
 Alcohol ..... 20 ounces  
 Mix. Macerate and decant.



**Gold Moldings, Varnish for.**

Shellac .....	4 ounces
Gamboge .....	6 ounces
Saffron .....	1 ounce
Annatto .....	2 ounces
Alcohol .....	1 pint

Macerate and decant.

**Varnish for Grate Fronts.**

Varnish with enough ivory black in it to cover well. Do not mix more than needed for use at one time, for when the mixture stands long it does not adhere or look so well.

**Guaic Varnish.**

Guaic gum, powdered....	2 ounces
Shellac .....	2 ounces
Denatured alcohol.....	10 ounces

Mix and dissolve on water bath.

**Guns, Varnish for.**

Shellac .....	1½ ounces
Dragon's blood.....	3 drams
Alcohol .....	1 quart

Mix and dissolve. Apply after the barrels are browned.

**Gutta-percha Varnish.**

Dissolve ¼ pound cleaned gutta-percha in 1 pint fine rosin oil and add, hot, 2 pints linseed oil varnish.

**Varnish for Harness.**

Alcohol, 95 per cent.....	1 gallon
White turpentine.....	1½ pounds
Gum shellac.....	1½ pounds
Venice turpentine.....	¼ pound

Let stand in a vessel in the sun or by a stove until the gums are all dissolved, then add:

Sweet oil.....	4 ounces
Lampblack .....	2 ounces

Mix well together.

**Harness Varnish.**

Isinglass .....	1 ounce
Indigo .....	1 ounce
Logwood .....	1 pound
Glue .....	1 pound
Soft soap.....	8 ounces
Vinegar .....	2 quarts

Mix by heat and strain.

**India Rubber Varnish.**

Incise 30 grams of finely cut caoutchouc in a linen bag, and suspend this within a flask containing a liter of benzine, by means of a thread held fast by the stopper, so that the bag remains near the surface of the liquid. In the course of six or eight days, the soluble portion of the caoutchouc, about 40 to 60 per cent, will pass into the benzine, while the contents of the bag will expand enormously. The clear solution, which is quite viscous, and contains 1.2 to 1.5 per cent of caoutchouc is then carefully separated. The swelled contents of the bag retain one-fourth to one-third of the benzine used, and may be utilized for the preparation of an inferior kind of varnish. A solution of India rubber in benzine, kept in half-full bottles, is decomposed on exposure to light, which may be seen by the change of the solution from a viscous to a thin fluid condition. Even in the dark this change goes on, but it requires about three times as much time.

**India Rubber Varnish.**

The scraps of vulcanized rubber, which is a mixture of rubber and sulphur, and which

dealers in hard rubber goods can deliver in abundance, can furnish by using the following method an excellent varnish, which dries promptly: Its color can be varied from a golden yellow to the deepest brown. It sticks very well to metals, and can be employed on electric apparatus. These clippings are put into a deep earthen pot, covered with a light lid. The pot is set upon hot coals. At the end of five minutes remove the pot from the fire and see if the material is melted. While the pot is on the fire take care not to lift the lid, because the vapors which would be thrown off take fire easily. After the rubber is all melted so that it can be poured out, and there are no more whole pieces, which can be discovered by stirring the mass with a large file, pour it into a flat tin basin. This basin should be rubbed with grease beforehand, and after the mass is cooled it is readily detached. Then break it into pieces, put it into a large bottle, pour on some benzol and rectified oil of turpentine, and shake the mixture up several times. The solution being complete, pour out the liquor to get rid of the impurities, and some harden rubber which remains at the bottom; and a very limpid, beautiful and excellent varnish is obtained.

**India Rubber Varnish.**

India rubber, in small pieces.....	2 ounces
Camphene .....	¼ pound
Naphtha .....	¼ ounce
Copal varnish.....	1 ounce

Mix and digest on a water bath.

**Insulating Varnish.**

Shellac .....	4 ounces
Sandarac .....	2 ounces
Oleic acid.....	2 ounces
Alcohol .....	1 pint

Mix, dissolve and decant.

**Insulating Varnish.**

Shellac .....	4 ounces
Sandarac .....	4 ounces
Elemi .....	1 ounce
Alcohol .....	20 ounces

Mix and dissolve.

**Insulating Varnish.**

Shellac .....	100 pounds
Denatured alcohol.....	40 gallons
Oxalic acid.....	1 pound

Mix and dissolve.

**Iron and Steel Varnish.**

Mastic .....	10 ounces
Camphor .....	5 ounces
Sandarac .....	15 ounces
Elemi .....	5 ounces
Alcohol .....	1 gallon

Mix and dissolve. Apply cold.

**Iron Varnish, for Outdoor Work.**

Tar oil.....	2 pounds
Asphaltum .....	½ pound
Rosin .....	½ pound

Mix by the aid of heat.

**Iron Varnish, Preservative.**

Common rosin.....	1 pound
Gutta-percha .....	½ ounce
Zinc sulphate.....	½ ounce
Benzine .....	1½ pints

Melt the rosin and gutta-percha, remove the fire and add the benzine, then the zinc sulphate. Mix well.

**Japan Varnish.**

Take 12 pounds Naples asphaltum and 2 pounds dark gum anime, melt it, and boil for 2 hours with 3 gallons linseed oil. Then boil 2 pounds dark amber with  $\frac{1}{2}$  gallon linseed oil, add the two together, and boil two hours longer, till the mass when cooled is plastic, like putty. This is afterward dissolved in 7 or 8 gallons of oil of turpentine, producing a black japan for wood or metal.

**Japanning.**

An extra fine black is prepared from:

Amber .....	12 ounces
Asphaltum, purified.....	2 ounces
Boiled oil.....	$\frac{1}{2}$ pint
Rosin .....	2 ounces
Oil of turpentine.....	16 ounces

Fuse the gum and rosin and asphaltum, add the boiled oil (hot), stir well together, and when cooling add the oil of turpentine.

**Knotting Varnish.**

Shellac .....	1 pound
Sandarac .....	3 ounces
Alcohol .....	3 pints

Dissolve and strain.

**Label Varnish.**

White lac.....	1 fl. ounce
Lead carbonate.....	4 drams
Ether .....	$\frac{1}{2}$ pint

Place the white shellac in a mortar and reduce to a moderately fine powder; then transfer to a bottle containing the ether and set aside, shaking the bottle occasionally until the powder resolves itself into a uniform solution; then add the lead in fine powder; shake well and filter through paper, returning the first portions of the filtrate two or three times until it becomes perfectly clear. Ordinary shellac may be used, but it imparts a brownish color to the labels. Paste the label upon the bottle, smooth as usual (it is not necessary to wait until it is dry), then apply the varnish with a soft brush.

**Label Varnish.**

Sandarac (in coarse powder) .....	$3\frac{1}{2}$ ounces
Mastic .....	2 ounces
Copaiba .....	1 ounce
Venice turpentine.....	2 ounces
Oil of turpentine.....	2 ounces
Alcohol .....	3 ounces
Absolute alcohol.....	3 ounces

Mix and macerate until solution is effected.

**Label Varnish.**

Canada balsam.....	5 ounces
Oil of turpentine.....	5 ounces

Mix.

**Label Varnish (for Gold Labels).**

Sandarac .....	3 ounces
Mastic .....	1 ounce
Canada balsam.....	1 ounce
Alcohol .....	1 pint

Mix, dissolve and strain.

**Label Varnish.**

Sandarac .....	1 pound
Mastic .....	$\frac{1}{2}$ pound
Camphor .....	$\frac{3}{4}$ ounce
Oil of lavender.....	2 ounces
Venice turpentine.....	1 ounce
Ether .....	1 ounce
Alcohol .....	1 pint

Macerate for 3 days and decant. This varnish may be thinned with alcohol.

**Black Leather Varnish.**

Dissolve 150 parts of shellac in 800 parts of alcohol, and add the solution to a melted mixture of 15 parts of Venice turpentine and 15 parts of yellow wax. Then add 40 parts of nigrosin (alcohol-soluble), and lastly enough alcohol to make 1,000 parts of varnish. The nigrosin may be substituted by 50 parts of lampblack, which should first be triturated with a small quantity of the alcoholic solution so as to produce a perfect mixture. The leather which is to be varnished should first be cleaned with a warm solution of green soap in water, or with a mixture of 3 parts of alcohol and 1 part ammonia water, then allowed to dry completely before applying the varnish with a soft brush. It is finally rubbed over with a dry brush.

**Leather Varnish.**

Sandarac .....	1 ounce
Mastic .....	1 ounce
Shellac .....	4 ounces
Rosin .....	2 ounces
Venice turpentine.....	1 ounce
Alcohol .....	2 pints

Mix, macerate and decant. To blacken, mix with 1 ounce nigrosin, dissolved in alcohol.

**Leather Varnish.**

Ruby shellac.....	1 pound
Venice turpentine.....	$\frac{1}{2}$ ounce
Sandarac .....	$\frac{1}{2}$ ounce
Castor oil.....	$\frac{1}{2}$ ounce
Lampblack .....	$2\frac{1}{2}$ ounces
Alcohol .....	5 pints

Dissolve the gums in the alcohol and decant, then add the lampblack rubbed up in the castor oil and a little alcohol.

**Leather Varnish.**

Venice turpentine.....	3 ounces
Nigrosin .....	30 grains
Aniline blue.....	8 grains
Alcohol .....	8 ounces

Dissolve the colors in a little alcohol and add to the Venice turpentine dissolved in the alcohol.

**Leather Varnish, Glossy Black.**

Shellac .....	1 ounce
Nigrosin .....	1 dram
Oil of turpentine.....	2 drams
Alcohol .....	8 ounces

Mix and dissolve.

**Leather Varnish, Dull Black.**

Shellac .....	4 ounces
Wax .....	$\frac{1}{2}$ ounce
Oil of turpentine.....	$\frac{1}{2}$ ounce
Nigrosin .....	$\frac{1}{4}$ ounce
Alcohol .....	1 pint

Mix and dissolve, by the aid of gentle heat on a water bath.

**Linseed Oil Varnish.**

Manganese borate.....	1 ounce
Boiled linseed oil.....	8 gallons

Mix and heat to boiling.

**Varnish for Lithographs, Copper Plates, Pictures, Chromos, Etc.**

Mastic .....	1 pound
Powdered glass.....	$\frac{1}{2}$ pound
Oil of turpentine.....	2 pints

Place in a bottle, cork, and expose to the sun's rays for one month, frequently agitating. To the thinned liquid add:

Larch turpentine.....	1 $\frac{1}{2}$ pounds
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After several days' exposure to the sun's rays, filter or decant.

**Asphaltum Varnish for Machinery.**

First paint the machine with a japan color, such as:

Asphaltum .....	3 ounces
Boiled oil.....	4 quarts
Burnt umber.....	8 ounces

Mix by heat, and when cooling thin with oil of turpentine. Then coat the painted surface with a suitable transparent or light varnish.

**Mahogany Varnish.**

Anime .....	1 pound
Linseed oil.....	3 pints
Litharge .....	$\frac{1}{2}$ ounce
Sugar of lead.....	$\frac{1}{2}$ ounce
Oil of turpentine.....	5 pints

Melt, mix and boil.

**Mahogany Varnish.**

Shellac varnish.....	1 pint
Dragon's blood.....	1 ounce

Mix.

**Mahogany Varnish.**

Shellac varnish.....	1 pound
Bismarck brown.....	$\frac{1}{2}$ ounce
Alcohol .....	$\frac{1}{2}$ ounce

Rub the color and alcohol and mix with the varnish.

**Maps, Prints, Varnish.**

Mastic .....	5 ounces
Sandarac .....	2 ounces
Camphor .....	1 ounce
Alcohol .....	16 ounces

Mix and dissolve.

**Maps, Prints, Varnish.**

Canada balsam.....	2 ounces
Oil of turpentine.....	4 ounces

Mix and dissolve.

**Varnish for Marble.**

To heighten the lustre of smooth marble surfaces, apply a mixture of 1 part of wax and 1 part of sandarac, dissolved in 6 parts of oil of turpentine. Polish with a soft brush.

**Mastic Varnish.**

Take of pale and picked gum mastic, 5 pounds; glass (pounded as small as barley, and well washed and dried), 3 pounds; finest freshly rectified oil of turpentine (lukewarm), 2 gallons; put them in a clean 4-gallon tin bottle or can, bung down securely, and keep it rolling backwards and forwards pretty smartly on a counter, or any other solid place, for at least 4 hours, when, if the gum is all dissolved, the varnish may be decanted; strain through muslin into another bottle, and allow to settle; if the solution is still incomplete, the agitation may be continued for some time longer, and a gentle warmth applied as well. A very fine varnish.

**Mastic Varnish.**

Second quality.—Mastic, 4 pounds; oil of turpentine, 2 gallons; dissolve with heat.

**Oak Varnish.**

Clear pale rosin,  $\frac{3}{4}$  pounds; oil of turpentine, 1 gallon; mix and dissolve.

**Oak Varnish.**

To the varnish made by the preceding formula, add Canada balsam, 1 pint. Both of these formulas produce cheap and excellent varnishes for wood or metal.

**Oak Varnish.**

Kauri gum.....	1 pound
Linseed oil.....	3 pints
Oil of turpentine.....	$\frac{5}{2}$ pints

Dissolve the gum in the oil by heat, then gradually add the oil of turpentine.

**Oak Varnish.**

Yellow rosin.....	1 pound
Canada balsam.....	4 ounces
Oil of turpentine.....	2 pints

Mix, dissolve and strain.

**Optical Goods, Varnish.**

A good shellac varnish is mixed with a little refined lampblack, previously rubbed up with a little alcohol. Strain through cheesecloth. Apply with camel-hair brush.

**Ornamental Iron Work Varnish.**

For fine delicate work the previous varnish will answer. For coarser work, see "Iron and Steel Varnish."

**Paper Varnish.**

Canada balsam.....	1 ounce
Oil of turpentine.....	2 ounces

Mix. Size the paper with gelatin solution before applying the varnish.

**Paper Varnish.**

Canada balsam.....	4 ounces
Camphene .....	8 ounces

Mix. Apply as directed in the preceding formula.

**Paper Varnish.**

Copal .....	4 ounces
Glass, powdered.....	4 ounces
Camphor .....	1 ounce
Ether .....	20 ounces

Macerate for a week, then add

Alcohol .....	5 ounces
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Again macerate for a week and decant.

**Picture Varnish.**

Mastic .....	12 ounces
Venice turpentine.....	$2\frac{1}{2}$ ounces
Camphor .....	$\frac{1}{2}$ ounce
Oil of turpentine.....	2 pints

Mix, dissolve and strain.

**Picture Varnish.**

Venice turpentine.....	8 ounces
Sandarac .....	8 ounces
Alcohol .....	2 pints

Mix and dissolve.

**Picture Varnish.**

Mastic .....	1 pound
Gum turpentine.....	4 ounces
Camphor .....	1 ounce
Glass, powdered.....	8 ounces
Alcohol .....	2 pints

Mix, dissolve and filter.

**Picture Varnish.**

Gum mastic.....	6 ounces
Oil of turpentine.....	1 quart

Mix, dissolve and decant.

**Rosin Varnish.**

Rosin .....	1 pound
Manganese oxide.....	$\frac{1}{2}$ ounce
Benzine .....	$\frac{1}{4}$ pints

Mix, dissolve by maceration and decant.



**Sealing Wax Varnish.**

Dissolve sealing wax of any color in 5 times its weight of alcohol. After 3 days decant. The resulting varnish is apt to be brittle.

**Shellac Varnish.**

Shellac .....	4 ounces
Alcohol .....	4 ounces
Castor oil.....	2 ounces
Aniline dye (alcoholic solution) .....	10 drops

Mix and dissolve. The resulting varnish can be thinned with alcohol or castor oil, according to the intended use.

**Spirit Varnish, Brown.**

Sandarac .....	3 ounces
Shellac .....	2 ounces
Alcohol .....	1 pint
Oil of turpentine.....	1 pint

Dissolve and filter.

**Spirit Varnish, Brown.**

Sandarac .....	10 ounces
Shellac .....	2 ounces
Elemi .....	1 ounce
Alcohol .....	1 quart

Dissolve by agitation, then add Venice turpentine..... 2 ounces

Mix.

**Spirit Varnish, Brown.**

Shellac .....	1 pound
Rosin .....	1 pound
Denatured alcohol.....	2 gallons

Mix, dissolve and filter.

**Spirit Varnish, White.**

Sandarac .....	10 ounces
Gum thus.....	4 ounces
Denatured alcohol.....	40 ounces

Mix. Dissolve and filter.

**Spirit Varnish, Red.**

Shellac .....	4 ounces
Sandarac .....	2½ ounces
Elemi .....	1 ounce
Dragon's blood.....	1 ounce
Alcohol .....	1 quart

Macerate for a week and strain.

**Stove Varnish.**

Asphaltum .....	2 pounds
Boiled linseed oil.....	1 pint
Oil of turpentine.....	2 quarts

Fuse the asphaltum in an iron pot, boil the linseed oil and add while hot, stir well, and remove from the fire. When partially cooled, add the oil of turpentine. Some makers add driers.

**Black Varnish for Straw Hats.**

Nigrosine .....	6 drams
Sandarac .....	4 ounces
Venice turpentine.....	1 ounce
Alcohol, enough to make..	1 pint

Macerate and strain.

**Black Varnish for Straw Hats.**

Shellac .....	10 ounces
Venice turpentine.....	1 ounce
Yellow wax.....	1 ounce
Nigrosine .....	2 ounces
Alcohol, enough to make..	2 quarts

Dissolve and strain.

**Black Varnish for Straw Hats.**

Saturated solution of borax	2 pints
Bleached shellac.....	1 ounce
Nigrosine .....	2 ounces

Boil the shellac and borax till dissolved, then add the color.

**Straw Hat Varnish.**

Shellac varnish or copal varnish colored with an aniline dye of the desired color, dissolved in alcohol, furnishes a good varnish for the purpose.

**Table Varnish.**

Oil of turpentine.....	1 pound
Beeswax .....	2 ounces
Colophony .....	1 dram

Mix and dissolve.

**Table Varnish.**

Dammar rosin.....	1 pound
Camphor .....	½ ounce
Oil of turpentine.....	2 pounds

Mix. Digest for 24 hours and decant.

**Tannin Varnish.**

Oil of turpentine.....	1 ounce
Alcohol .....	20 ounces
Tannin .....	5 ounces

Mix and dissolve.

**Tapestry or Drapery Varnish.**

Sandarac .....	100 parts
Shellac .....	50 parts
Venice turpentine.....	50 parts
Mastic .....	50 parts
Elemi .....	20 parts

Contuse and soak in

Alcohol .....	700 parts
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Mix and dissolve, then set aside and decant.

**Tar Varnish for Wood and Iron.**

Coal tar.....	1½ gallons
Oil of turpentine.....	12 ounces
Sulphuric acid.....	3 ounces

Mix and stir with a stick. Apply with brush.

**Theatrical Varnish.**

For affixing mustaches.

Rosin .....	4 drams
Castor oil.....	1 dram
Methylated spirit.....	16 fl. drams

Mix, dissolve, strain and perfume.

**Varnish for Tools.**

Shellac .....	1 pound
Alcohol .....	1 pint

Mix and dissolve. Dip the tools into the varnish and hang up to dry.

**Transfer Varnish.**

Mastic .....	2½ ounces
Sandarac .....	¾ ounce
Canada balsam.....	½ ounce
Alcohol .....	5 ounces

Mix and dissolve.

**Transfer Varnish.**

Mastic .....	6½ ounces
Rosin .....	12½ ounces
Venice turpentine.....	25 ounces
Sandarac .....	25 ounces
Alcohol .....	5 pints

Mix. Macerate with frequent shaking for 3 days, then strain.

**Transparencies, Varnish.**

Dissolve wax in oil of turpentine.

**Turpentine Varnish.**

Rosin .....	4 pounds
Oil of turpentine.....	1 gallon

Mix, dissolve and strain.

**Umbrella Varnish.**

Litharge .....	1 pound
Oil of turpentine.....	2 pints
Linseed oil.....	2 pints

Boil together and strain.

**Violin Varnish.**

Sandarac .....	1½ ounces
Mastic, in tears.....	2 ounces
Elemi .....	½ ounce
Dragon's blood.....	¼ ounce
Oil of turpentine.....	¾ ounce
Castor oil.....	¾ ounce
Alcohol .....	10 ounces

Put the oil of turpentine and alcohol in a wide-mouthed bottle, with a small quantity of powdered glass, and add mastic. Stir frequently, and filter 24 hours, add the other resins. Leave the mixture to stand for another 24 hours, and then add the oil under stirring. Let the mixture stand for a fortnight in strong light; then filter through cotton.

**Violin Varnish.**

Copal, powdered.....	4 ounces
Glass, powdered.....	4 ounces
Camphor .....	½ ounce
Alcohol .....	1 pint

Mix and dissolve. Filter.

**Walking Stick Varnish.**

Copal .....	1 pound
White rosin.....	1 pound
Orange shellac.....	2 pounds
Denatured alcohol.....	1 gallon

Mix, dissolve and decant.

**Water Varnish.**

Gum arabic.....	1 pound
Glucose .....	1 pound
Water .....	3 pints

Mix, dissolve and strain.

**Water Varnish.**

White of egg.....	1 pint
Water .....	1 pint
Carbolic acid, or	
Salicylic acid, or	
Thymol .....	10 grains

Mix.

**Water Varnish.**

Pale glue.....	1 pound
Water .....	2 gallons

Mix and dissolve by gentle heat.

**Lac Water Varnish.**

Shellac .....	6 ounces
Borax .....	1½ ounces
Water .....	1 pint

Mix and boil till dissolved.

**Wax Varnish.**

Wax .....	5 ounces
Oil of turpentine.....	1 quart

Mix and dissolve.

**White Varnish.**

Mastic .....	1 ounce
Sandarac .....	4 ounces
Elemi .....	½ ounce
Venetian turpentine.....	8 ounces
Alcohol .....	1 pint

Dissolve and decant.

**White Varnish.**

Tender copal, 1½ ounces; camphor, 1 ounce; alcohol (95 per cent.), 1 quart, to which, when dissolved, is added mastic, 2 ounces; Venice

turpentine, 1 ounce. The whole is then dissolved and strained. This varnish is extremely hard.

**Varnish for Wooden Shoes.**

Powdered sandarac.....	1 ounce
Burgundy pitch.....	11 ounces
Oil of turpentine.....	40 ounces

Mix and dissolve.

**Walnut Varnish.**

Shellac .....	1½ pounds
Bismarck brown.....	1 ounce
Nigrosine .....	½ ounce
Alcohol .....	1 gallon

Mix and dissolve.

**Zinc White Varnish.**

Gum dammar.....	1 ounce
Gum mastic.....	1 ounce
Benzine .....	5 ounces

Powder the gums and dissolve in the benzine; then rub up 1 ounce of finely levigated zinc white with the solution.

**To Remove Varnish.**

Solution of caustic soda (20° B.), 20 pounds, potato starch, 1 pound, and water, 20 pints, are placed in a closed boiler and thoroughly agitated. The heat thus generated causes gelatinization of the mass, which is then treated with 57¾ pints of water and 1½ pounds of potato starch added to form 100 pounds of product. This varnish remover may be reduced with water to any desired percentage of alkali.

**Artificial Venice Turpentine.**

Rosin .....	1 pound
Benzine .....	1 pint
Oil of turpentine.....	1 pint

Mix and dissolve. Then warm the mixture on a water bath till thinned to the desired consistence.

**Artificial Venice Turpentine.**

Rosin .....	17 ounces
Boiled linseed oil.....	12 ounces
Oil of turpentine.....	8 ounces

Mix and dissolve.

**Factitious Venice Turpentine, B.P.C.**

Rosin .....	6¼ ounces
Linseed oil.....	2¼ ounces
Oil of turpentine.....	1½ ounces

Melt together the rosin and oil, remove from the source of heat, and stir in the oil of turpentine.

**FURNITURE POLISHES.****Furniture Cream.**

Pearlash, 2 ounces; soft soap, 4 ounces; beeswax, 1 pound; water, 1 gallon; boil until the whole is united and forms a creamy liquid when cold.

**Furniture Cream.**

Beeswax, ½ pound; good yellow soap, ¼ pound; water, 5 pints; boil to a proper consistence, with constant agitation, then add boiled oil and oil of turpentine, of each ½ pint. For use, dilute with water, spread upon the surface with a painter's brush, and then polish off with a hard brush, cloth or leather.

**Furniture Cream.**

Boiled oil (pale), ¼ pint; beeswax, 1½ ounces; mixed by heat. Applied by a rubbing and at once polished off.

**Furniture Cream.**

White wax, 8 parts; rosin, 2 parts; true Venice turpentine,  $\frac{1}{2}$  pint; melt at a gentle heat. The warm mass, completely melted, is poured into a stone jar, agitated, and 6 parts of oil of turpentine (rectified) added thereto. After 24 hours the mass, having the consistency of soft butter, is ready for use. Before using the paste, the furniture should be washed with soap and water, and then well dried.

**Furniture Cream.**

White wax.....	$\frac{1}{2}$ ounce
Beeswax .....	4 ounces
Castile soap.....	$\frac{1}{2}$ ounce
Oil of turpentine.....	$\frac{1}{2}$ pint
Boiling water.....	$\frac{1}{2}$ pint

Melt the wax in a covered jar by gentle heat, add the oil of turpentine carefully, and then gradually add the soap, previously dissolved in the water, and stir till stiff.

**Furniture Cream.**

Household soap.....	2 $\frac{1}{2}$ ounces
Potassium carbonate.....	2 ounces
Water .....	2 pints
White wax.....	20 ounces
Oil of turpentine.....	4 pints

Boil the first four articles, stirring continuously till a homogeneous mass is obtained. Then gradually incorporate the oil of turpentine.

**Furniture Cream.**

(No. 1.)

Yellow wax.....	8 ounces
Oil of turpentine.....	15 ounces

Melt with gentle heat.

(No. 2.)

Pearlash .....	1 ounce
Soft soap.....	3 ounces
Water .....	3 pints

Mix and heat.

Mix the two solutions while still hot, stirring continuously.

**Furniture Cream.**

Ammonium oleate.....	2 ounces
Ammonia water.....	2 ounces
Shellac varnish.....	6 ounces
Linseed oil.....	6 ounces

Mix the first three ingredients, stirring well, then gradually incorporate the linseed oil.

**Furniture Cream.**

Wax .....	3 ounces
Pearlash .....	2 ounces
Water .....	6 ounces

Heat together and add, in the order named, stirring well after each addition:

Linseed oil.....	4 ounces
Oil of turpentine.....	5 ounces

**Furniture Cream.**

Beeswax .....	100 ounces
Potassium carbonate.....	1 ounce
Oil of turpentine.....	5 quarts
Water .....	6 quarts

Boil the wax, potassium carbonate and 3 quarts of water until a homogeneous mass is obtained. Gradually incorporate the oil of turpentine and then add all at once the remainder of the water, previously heated, stirring well.

**Furniture Cream.**

White soap.....	5 ounces
White wax.....	40 ounces
Water .....	2 gallons
Potassium carbonate.....	2 ounces

Mix, boil together, and add

Oil of turpentine.....	10 pints
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Mix well.

**Furniture Oil.**

Linseed oil.....	1 quart
Distilled vinegar.....	6 ounces
Oil of turpentine.....	3 ounces
Hydrochloric acid.....	1 ounce
Alcohol .....	2 ounces

Mix well.

**Furniture Oil.**

Linseed oil.....	8 ounces
Vinegar .....	4 ounces
Alcohol .....	3 ounces
Mucilage .....	$\frac{1}{2}$ ounce
Oil of turpentine.....	$\frac{1}{2}$ ounce
Butter of antimony.....	$\frac{1}{4}$ ounce
Hydrochloric acid.....	1 ounce

Mix well.

**Furniture Oil.**

Linseed oil.....	16 ounces
Rosin .....	4 ounces
Alcohol .....	3 ounces
Butter of antimony.....	1 ounce
Hydrochloric acid.....	2 ounces

Melt the rosin, add the oil, take the mixture off the fire and stir it in the vinegar; let it boil for a few minutes, stirring well; when cool, put into a bottle and add the other ingredients, shaking all together. The last two formulas are especially used for reviving French polish.

**Furniture Oil.**

Linseed oil.....	14 ounces
Vinegar .....	1 $\frac{1}{2}$ ounces
Hydrochloric acid.....	$\frac{1}{2}$ ounce

Mix.

**Furniture Oil.**

Linseed oil.....	1 pint
Oil of turpentine.....	$\frac{1}{2}$ pint
Alcohol .....	4 ounces
Powdered rosin.....	1 $\frac{1}{2}$ ounces
Rose pink.....	$\frac{1}{2}$ ounce

Mix.

**Furniture Oil.**

Melt 3 or 4 pieces of sandarac, each of the size of a walnut, add 1 pint of boiled oil, and boil together for 1 hour. While cooling, add 1 dram of Venice turpentine, and, if too thick, a little oil of turpentine also. Apply the polish to the varnished parts of the furniture, and after some hours rub it off; rub the furniture daily, without applying fresh polish, except about once in two months. Water does not injure this polish, and any stain or scratch may be again covered, which cannot be done with French polish.

**Furniture Oil.**

Linseed oil.....	4 pints
Tincture of benzoin.....	4 ounces
Copal .....	2 ounces
Vinegar .....	1 pint
Solution of antimony chloride .....	6 ounces
Alcohol .....	10 ounces

Dissolve the copal in the oil by the aid of heat. When cool, add the other ingredients, stirring well.

**Furniture Oil.**

Linseed oil.....	1 pint
Oil of turpentine.....	6 ounces
Dragon's blood.....	$\frac{1}{2}$ ounce
Hydrochloric acid.....	1 ounce

Dissolve the dragon's blood in the oil of turpentine, add the oil and acid. Mix.



**Furniture Oil.**

Linseed oil.....	1 pint
Oil of turpentine.....	1 pint
Rosin .....	1 ounce
Alcohol .....	1 ounce
Nitric acid.....	½ ounce

Dissolve the rosin in the oil of turpentine, incorporate the oil and then add the alcohol and acid.

**Furniture Oil.**

Linseed oil.....	12 ounces
Solution of antimony chloride .....	1 ounce
Old beer.....	10 ounces
White of 2 eggs.	

Mix the oil and antimony chloride and the beer and eggs separately, then combine the two mixtures.

**Furniture Oil.**

Boiled linseed oil.....	1 gallon
Yellow wax.....	2 pounds

Melt. If desired, color with alkanet root.

**Furniture Oil.**

Linseed oil.....	8 ounces
Acetic acid.....	½ ounce
Oil of lavender.....	1 dram
Alcohol .....	2 drams

Mix.

**Furniture Oil.**

Linseed oil.....	2 pints
Alkanet root in small chips .....	4 ounces
Shellac varnish.....	2 ounces

Suspend the alkanet in the oil by means of a piece of muslin, and boil for 2 hours. Then remove the muslin containing the root and add the varnish.

**Furniture Oil.**

Linseed oil.....	1 gallon
Alcohol .....	1 pint
Butter of antimony.....	2 pints

Mix.

**Furniture Oil.**

Beeswax .....	1 pound
Alkanet root.....	½ ounce
Linseed oil.....	2 pints
Oil of turpentine.....	1 pint

Mix, melt together, boil for 5 minutes and strain.

**Furniture Oil, Dark.**

Alkanet root.....	2 ounces
Shellac varnish, dark.....	8 ounces
Oil of turpentine.....	4 ounces
Yellow beeswax .....	4 ounces
Linseed oil.....	2 pints

Boil the oil and wax and alkanet for half an hour. When nearly cool add the oil of turpentine and varnish. Let the mixture stand for a few days, then strain.

**Furniture Paste.**

Beeswax .....	1 pound
Linseed oil.....	1 pound
Turpentine .....	1 pound

Mix and melt together.

**Furniture Paste.**

Beeswax .....	4 ounces
Oil of turpentine.....	10 ounces
Alkanet root.....	1 ounce

Mix, melt, and strain while hot.

**Furniture Paste.**

Beeswax .....	8 ounces
Rosin .....	2 ounces
Oil of turpentine.....	4 ounces
Venetian red.....	½ ounce
Mix, melt, and strain while hot.	

**Furniture Paste.**

Soft soap.....	1 ounce
Water .....	10 ounces
Yellow wax.....	4 ounces
Oil of turpentine.....	4 ounces

Dissolve the soap in the water, boiling hot, and then add the wax and oil of turpentine, previously melted together. Mix well.

**Furniture Paste.**

Ceresine .....	3 pounds
Oil of turpentine.....	4 pints
Rosin .....	6 ounces
Vermilion .....	1 ounce

Mix, melt together, and strain while hot.

**Furniture Paste.**

Alkanet root.....	6 ounces
Oil of turpentine.....	2½ pints
Yellow wax.....	4 ounces
Paraffin .....	10 ounces

Macerate the alkanet root in the oil of turpentine, hot, for 24 hours and strain. Then melt the wax and paraffin and incorporate the alkanet-turpentine mixture.

**Furniture Polish.**

Alcohol .....	21 ounces
Gum shellac.....	2 ounces
Linseed oil.....	14 ounces
Gum benzoin.....	2 ounces
Oxalic acid.....	1 ounce
White rosin.....	2 ounces

Dissolve the gums and oxalic acid in the alcohol; let the mixture stand for 24 hours, and then add the oil.

**Furniture Polish.**

Shellac .....	4 ounces
Alcohol .....	2 pints
Dissolve and add	
Linseed oil.....	2 pints
Oil of turpentine.....	1 pint

Mix well and add

Sulphuric ether.....	4 ounces
Ammonia water.....	8 ounces

Mix well. Apply with a sponge.

**Furniture Polish.**

Shellac .....	2 pounds
Mastic .....	1 ounce
Sandarac .....	1 ounce
Copal .....	12 ounces
Alcohol .....	1 gallon

Mix and dissolve. This solution is intended to be used as a French polish, which involves application with a woollen cloth and energetic rubbing.

**Furniture Polish.**

Olive oil.....	9 ounces
Oil of amber, rectified.....	9 ounces
Oil of turpentine.....	9 ounces
Tincture of alkanet.....	1 ounce

Mix and keep in a well-stoppered bottle.

**Furniture Polish.**

Melt together 4 parts of hard paraffin and 1 part animal fat, and pour the mixture into a vessel containing hot water. Add 12 parts of oil of turpentine, and stir in. Let the mixture stand until cold and remove the paste for use.

**Furniture Polish.**

Yellow wax.....	1 pound
Yellow soap.....	2 ounces
Oil of turpentine.....	2 pints
Boiling water.....	2 pints

Mix. Melt the soap and wax over a slow fire, add the oil of turpentine, and lastly stir in the water until quite cold.

**Furniture Polish.**

Alcohol .....	4 ounces
Turpentine .....	2 ounces
Dammar varnish.....	1 ounce
Linseed oil (raw).....	8 ounces
Acetic acid.....	1 ounce

Mix.

**Furniture Polish.**

Egg whites.....	3 ounces
Linseed oil.....	1 pint
Methyl alcohol.....	5 ounces
Archil.....	1 ounce
Hydrochloric acid.....	4 ounces
Vinegar.....	1 pint

Dissolve the archil in the oil by heat, gradually add the other ingredients and stir well.

**Furniture Polish.**

White wax.....	1 pound
White soap, powdered.....	2 ounces
Oil of turpentine.....	2½ pints
Boiling water.....	2 pints

Melt the wax and soap by gentle heat, stir in the oil of turpentine, and gradually the water, previously warmed.

**Furniture Polish.**

Alcohol .....	2 ounces
Oil of turpentine.....	4 ounces
Copal varnish.....	2 ounces
Raw linseed oil.....	1 pint
Acetic acid.....	2 ounces

Mix well.

**Furniture Polish.**

Oil of amber.....	1 pint
Oil of turpentine.....	1 pint
Crocus .....	1 ounce

Mix and macerate for a week. Strain.

**Furniture Polish.**

Olive oil.....	2 pints
White wax.....	4 ounces
Oil of turpentine.....	2 pints
Crocus .....	2 ounces

Melt together; macerate for 3 days and strain.

**Furniture Polish.**

Quillaja .....	2 ounces
Linseed oil.....	2 pints
Oil of turpentine.....	4 ounces
Butter of antimony.....	4 ounces
Alcohol .....	8 ounces
Hot water.....	8 ounces
Diluted acetic acid.....	8 ounces

Digest the quillaja with the hot water; when cool, add the alcohol and squeeze through a straining cloth. Mix this liquid with the diluted acetic acid; add the linseed oil previously mixed with the oil of turpentine, and shake thoroughly. Finally add the butter of antimony slowly with thorough agitation.

**Furniture Polish.**

Colophony, quantity sufficient.

Milk of lime, quantity sufficient.

Mix intimately; after 24 hours, dry by heat, and powder. This powder is used for preparing varnishes from soft resins, as follows: Melt 100 parts of pine resin, add with constant stirring 10 to 15 parts of the above powder, continue to heat for 30 minutes, re-

move from fire and add 25 to 50 parts of linseed oil and 35 to 90 parts of turpentine, according to the consistency desired.

**Furniture Polish.**

Gum shellac.....	2 ounces
Alcohol .....	3 ounces

Mix and dissolve by the water bath, and after it cools, add:

Benzine .....	1 ounce
Oxalic acid.....	½ ounce
Raw linseed oil, enough to make.....	1 quart

Mix. Apply to the furniture with a soft cloth or chamois.

**Furniture Polish.**

Linseed oil.....	3 ounces
Sweet oil.....	1 ounce
Oil of turpentine.....	1 ounce
Alcohol .....	½ ounce
Benzine .....	½ ounce
Holland gin.....	¼ ounce
Ammonia water.....	½ ounce

Mix well.

**Furniture Polish.**

Linseed oil.....	6 ounces
Dilute acetic acid.....	3 ounces
Alcohol .....	3 ounces
Butter of antimony.....	½ ounce

Mix the linseed oil gradually with the acetic acid, then add the alcohol, and lastly the butter of antimony. To be applied with a soft cloth, using considerable friction.

**Furniture Polish.**

Linseed oil.....	1 gallon
Benzine .....	1 pint
Shellac varnish.....	1 pint
Oil of turpentine.....	2 pints

Mix well.

**Furniture Polish.**

Olive oil.....	1 gallon
Benzine .....	1 pint
White wax.....	2 pounds
Oil of turpentine.....	4 pints

Melt together.

By digesting 2 ounces Spanish saffron, or a similar quantity of alkanet root in the mixture, a golden yellow or red color can be given to this polish.

**Furniture Polish.**

Oil of turpentine.....	1 quart
Oil of amber.....	2 quarts
Olive oil.....	2 quarts
Oil of lavender.....	2 ounces

Mix.

**Furniture Polish.**

White wax.....	1 pound
Oil of turpentine.....	4 pints
Oil of mirbane.....	½ ounce

Mix and melt together.

**Polish for Enameled Leather.**

Take 1 pint of cream and 1 pint of linseed oil, heat lukewarm and mix well together. This is said to be an excellent polish for enameled leather tops, etc., which are not too far gone. The leather must be well cleaned and dry previous to applying the polish, which should be put on with a sponge and then rubbed with a soft, dry cloth until a good polish is produced.

**Furniture Reviver.**

Linseed oil.....	16 ounces
Camphor .....	2 ounces
Vinegar .....	4 ounces
Solution of ammonia.....	$\frac{1}{2}$ ounce
Butter of antimony.....	1 ounce

Dissolve the camphor in the linseed oil, by means of a water bath; add the vinegar gradually, shaking well between each addition, then add the other ingredients.

**Polishing Wax for Furniture.**

Pour 3 parts oil of turpentine over 4 parts white wax in an earthen vessel, cover the vessel tightly with strong paper, and place it in warm water on the back part of a warm stove to melt the wax. When homogeneous, let the mixture cool until it begins to be solid and assumes a whitish color, then incorporate 2 parts strong alcohol.

**Polishing Wax.**

White wax.....	1 pound
Gum copal.....	4 ounces
Oil of turpentine.....	8 ounces
Oil of mirbane .....	$\frac{1}{2}$ ounce

Melt the copal and oil of turpentine together, add the wax and when nearly cool, add the oil of mirbane. Pour into molds before hardening.

**French Polish.**

Gum sandarac .....	14 $\frac{1}{2}$ ounces
Gum in drops.....	7 $\frac{1}{2}$ ounces
Yellow shellac.....	14 $\frac{1}{2}$ ounces
Alcohol, 90 per cent.....	$\frac{3}{4}$ quarts

The mode of polishing with this varnish is as follows: First the wood to be treated is saturated with linseed oil, the excess to be removed with old flannel or by sawdust sprinkled over it, which helps to take it up. After this varnish is applied by saturating the surface with a piece of old soft linen cloth many times folded into a sort of cushion and rubbed softly on the wood, turning the linen from time to time until it appears nearly dry. The linen should be saturated afresh with varnish and the rubbing continued until the pores of the wood are completely filled. Care should be taken not to make the linen too wet nor rub too hard, especially at the beginning of the operation. When the varnish sticks or becomes tacky, a very small drop of sweet oil is to be applied with the end of your finger uniformly all over the cushion. The finishing is effected by pouring a little pure alcohol upon a piece of clean linen, which is then rubbed lightly over the varnished wood; and as the linen and varnish dry the wood is rubbed more briskly until it assumes a beautiful mirror-like polish. Two or three coats of varnish are sufficient for woods not very porous.

**Floor Polish.**

Yellow wax.....	125 parts
Hard soap.....	30 parts
Glue .....	60 parts
Soda ash.....	125 parts
Water and ochre, sufficient quantity.	

Dissolve the soda ash in 2,000 parts of water, add the wax, boil down to 1,250 parts, and add the soap. Dissolve the glue in 500 parts of water by the aid of heat, stir in the ochre, and mix the whole with the solution of wax and soap.

**Moody's New Polish.**

Rectified wood spirit.....	8 parts
Shellac .....	1 $\frac{1}{2}$ parts
Benzoin .....	$\frac{1}{2}$ part
Dragon's blood (if desired) .....	1 1/15 parts

Mix. Dissolve the ingredients by heating and filter the solution through flannel. Apply with camel-hair brush.

**Floor Polish for Light Wood.**

White wax.....	750 parts
Bleached shellac.....	750 parts
Bright rosin.....	60 parts
Oil of turpentine.....	1,000 parts
Alcohol, 90 per cent.....	4,000 parts

Melt the wax, shellac and rosin together, remove from the fire, and add, while still hot, the oil of turpentine, and stir well. Warm the alcohol to a point nearly that of the brushes, and afterwards polished with flannel stirring. This should be applied with varnish brushes, and afterwards polished with flannel or woollen cloths.

**Floor Polish.**

Stearin .....	1 pound
Yellow wax.....	4 ounces
Potash .....	9 ounces
Hard soap.....	1 $\frac{1}{2}$ ounces
Water .....	4 pints

Mix and boil together. Add coloring matter to suit.

**Floor Polish.**

White wax.....	12 ounces
Bleached shellac.....	12 ounces
Bright rosin.....	1 ounce
Oil of turpentine.....	1 pint
Alcohol .....	4 pints

Melt the wax, shellac and rosin together, remove from the fire and add, while still hot, the oil of turpentine, and stir well. Warm the alcohol to a point nearly that of the solution and add, with rapid and thorough stirring.

**Floor Gloss, or Polish.**

Boil 20 parts of litharge in 100 parts of linseed oil for an hour, then add 75 parts of best yellow wax melted and 7 parts tallow, and 90 parts molasses. Heat to 230° F. until the water is evaporated, and then add 50 parts lampblack, 140 parts oil of turpentine, 17 parts alcohol,  $\frac{2}{3}$  parts shellac, 1 part aniline.

**Floor Gloss, or Polish.**

Cut 1 pound of best beeswax into small pieces, and thoroughly dissolve in 3 pints of oil of turpentine, stirring occasionally, if necessary. The mixture should be only a trifle thicker than the oil of turpentine alone. Apply it with a rag to the surface of the floor, which should be smooth and perfectly clean; this is the difficult part of the work, for the right amount to be applied is learned only by experience, less being required for hard, coarse-grained wood than for soft and open-grained. Experiment on a square foot or so first. Put on what you think is enough, and leave it untouched for 24 hours or longer if necessary. When thoroughly dry, rub it with a hard brush until it shines. If it polishes well, repeat the process over the entire floor; but if not, remove the wax with fine sandpaper and try again, using more or less than before until the desired result is secured. If the mixture is slow in drying,



add a little japan dryer, in the proportion of about 1 part of the dryer to 6 of turpentine.

#### Floors, to Restore Color.

Allow 1 part calcined soda to stand  $\frac{3}{4}$  hour in 1 part slaked lime. Add 15 parts water and boil. Apply this solution with a rag. When dry, rub with hard brush, fine sand and water. One part sulphuric acid with 8 parts water will enliven the wood. When dry, wash and wax.

#### Floor Polish.

Potash .....	1 pound
Water .....	4 pints
Yellow wax.....	5 pounds

Mix and boil all together until emulsified, then incorporate boiling water to reduce the mixture to the desired consistency.

#### Floor Polish, Yellow.

Solution of caustic soda (1:16) .....	1 pint
Powdered ochre.....	3 ounces
Yellow wax.....	6 ounces

Boil together with constant stirring, until emulsified.

#### Floor Polish, Brown.

Solution of caustic soda (1:16) .....	1 pint
Powdered umber.....	4 ounces
Yellow wax.....	6 ounces

Prepare as directed in the preceding.

#### Floor Polish, Mahogany Brown.

Wax .....	5 pounds
Soda lye (1:16).....	15 pounds
Powdered burnt umber..	7 pounds

Mix and boil together until saponified.

#### Floor Polish.

Wax .....	1 pound
Potassium carbonate.....	8 ounces
Water .....	$2\frac{1}{2}$ pints
Boric acid.....	4 ounces

Boil the wax, potassium carbonate and water together. When emulsified, add the boric acid and stir well.

#### Floor Dressing.

Wax, yellow.....	1 pound
Oil of turpentine.....	1 pound
Oil of amber.....	2 pounds
Boric acid.....	$\frac{1}{2}$ pound

Mix and melt together by gentle heat.

#### Liquid Veneer.

Gum anise.....	1 pound
Linseed oil.....	3 pints
Litharge.....	$\frac{1}{2}$ ounce
Lead acetate.....	$\frac{1}{2}$ ounce
Iron sulphate.....	$\frac{1}{2}$ ounce
Oil of turpentine.....	$5\frac{1}{2}$ pints

Mix and boil all together, stirring well, then strain. To color this veneer, the so-called "fat aniline colors" or "Sudan dyes" should be used.

#### Liquid Veneer.

Copal .....	1 pound
White wax.....	1 pound
Linseed oil.....	4 pints
Oil of turpentine.....	1 gallon

Mix and melt the ingredients together. Color with "Sudan dye" as directed in the preceding formula.

#### Polish on Mahogany.

Mix one part of boiled linseed oil with 2 parts of alcoholic shellac varnish. Shake well before using. Apply in small quantities with a cloth, and rub the wood vigorously until the desired polish is secured.

#### Polish on Mahogany.

Boiled linseed oil.....	2 pounds
Burnt umber.....	4 ounces
Copal varnish.....	1 pound
Shellac varnish.....	2 pounds

Boil the oil and umber together. If not clear, strain, then add the varnishes. Shake before using.

#### Piano Polish.

Butter of antimony.....	$1\frac{1}{2}$ ounces
Alcohol .....	$1\frac{1}{2}$ ounces
Raw linseed oil.....	8 ounces
Pure cider vinegar.....	8 ounces

Mix.

#### Piano Case Polish.

Raw linseed oil.....	$2\frac{1}{2}$ pints
Oil of turpentine.....	10 ounces
Benzine .....	5 ounces
Alcohol .....	5 ounces
Ammonia water.....	5 ounces

Mix. Shake before using.

#### To Polish Walnut.

To give black walnut a fine polish so as to resemble rich old wood, apply a coat of shellac varnish, and then rub it with a piece of smooth pumice stone until dry. Another coat may be given and the rubbing repeated. After this, a coat of polish, made of linseed oil, beeswax and oil of turpentine, may be well rubbed in with a dauber, made of a piece of sponge tightly wrapped in a piece of fine flannel several times folded and moistened with the polish. If the work is not fine enough, it may be smoothed with the finest sandpaper and the rubbing repeated. In the course of time the walnut becomes very dark and rich in color, and in every way is superior to that which has been varnished.

#### New Polish for Wood.

Dissolve 6 pounds of shellac in about 4 to 5 gallons of pure alcohol. Then pour  $3\frac{1}{2}$  ounces of high grade sulphuric ether over  $3\frac{1}{2}$  ounces of collodion cotton in a bottle, add  $1\frac{1}{4}$  ounces of camphor, stir thoroughly and add enough alcohol, 96 per cent, to completely dissolve the cotton.

Mix the two solutions. This polish is highly inflammable.

#### White Polish, for Wood.

White wax.....	1 pound
Solution of potash.....	32 ounces

Mix. Boil to proper consistency.

#### Polish for Marble.

Magnesia .....	$\frac{1}{2}$ ounce
Oxalic acid.....	2 ounces
Warm rain water.....	1 pint

Mix. Polish with woolen cloths.

#### Polish for Marble Clocks.

First clean the marble with a mixture of soft soap, 1 ounce; fuller's earth, 1 ounce; and water, 4 ounces. Apply this with a soft

rag and allow to remain on for several hours. Wash off with warm water, dry with a soft cotton towel, and polish with the following, briskly rubbing:

Linseed oil.....	2 ounces
Oil of turpentine.....	1 ounce
Methylated spirit.....	1 ounce
Old ale.....	4 ounces

Mix well by shaking.

#### Polish for Marble.

Whiting .....	4 ounces
Oxalic acid, powdered....	1 ounce
Denatured alcohol.....	8 ounces

Mix. Shake before using.

#### Polish for Marble.

Pumice, powdered.....	1 ounce
Prepared chalk.....	2 ounces
Dried sodium carbonate..	1 ounce

Mix. Make into a paste with a mixture of equal parts of glycerin and water.

#### To Dye Mother-of-Pearl Greenish Black.

The objects are covered with ammonia water, to which more silver chloride has been added than it can dissolve. After one or two days the mother-of-pearl is taken out and exposed to the sunlight for a few days. The greenish lustre cannot be produced at will, but seems to depend on the mother-of-pearl itself. A solution of bismuth sulphide in sodium hyposulphite has also been employed for the purpose.

#### To Color Meerschäum.

Ordinarily, the pipe to be colored is boiled in a preparation of wax, which is partly absorbed, a thin coating of wax being held on the surface of the pipe, and which is capable of taking a high polish. The oil of tobacco absorbed by the pipe is retained under the wax, and the hue of the pipe grows darker in proportion to the quantity of tobacco burned. A meerschäum pipe at first should be smoked very slowly, and before a second bowlful is lighted the pipe should cool off. By this method the coating of wax is kept as far up the bowl as possible. Rapid smoking will overheat the bowl, driving the wax off and leaving the pipe dry and raw. A new pipe should never be smoked out of doors in cold weather.

#### To Color Meerschäum.

Fill the pipe and smoke down about one-third, or to the height to which you wish to color. Leave the remainder of the tobacco in the pipe and do not empty or disturb it for several weeks, or until the desired color is obtained. When smoking, put fresh tobacco on the top and smoke to the same level.

#### To Polish Slate (Magnus' Patent).

Linseed oil.....	7 pounds
Ground ochre.....	1 pound
Tar oil.....	3 pounds
Asphaltum .....	1 pound

Mix intimately. Apply the mixture to the surface of the slate by means of a brush, then submit the slate to a heat of about 200° F., when it should be cooled off and polished with pumice stone and tripoli.

#### Blacking, Stove Dealer's Liquid.

Plumbago .....	1 pound
Rosin .....	4 ounces
Benzine .....	1 gallon

Dissolve the rosin in the benzine, and mix the plumbago with it. It is said to give no offensive smell when the stove is used and to keep the iron from rusting. Another process for a good liquid blacking is to mix with powdered plumbago enough asphaltum varnish to form a thick paste and to add to it sufficient oil of turpentine or benzine to bring the mixture to the requisite degree of thinness.

#### To Prevent Stoves from Rusting.

Apply kerosene with a cloth. This will prevent stoves from rusting during the summer. Also an excellent material to apply to all iron tools used about a farm.

#### Lacquer for Tinware.

Thirty parts of crystallized copper acetate are rubbed to a fine powder in a mortar, then spread out in a very thin layer upon porcelain, and kept for a few days in a moderately warm place, whereby the water of crystallization and a large part of the acetic acid will be dissipated. The residue, bright brown, light powder, is then rubbed up with a little oil of turpentine, and finally mixed, under continued stirring, with 100 parts of fine copal varnish heated to 167° F. If the copper salt has been very finely levigated, it will be dissolved, on stirring, in perhaps 15 minutes. The varnish is now poured into a glass and set aside, for a few days, in a warm place, being occasionally shaken up. Any small, undissolved residue of copper oxide may be utilized at the next operation.

#### Motor Tire Paint.

Zinc oxide.....	2 ounces
Oil of turpentine.....	2 fl. ounces
Petrol .....	3 fl. ounces
Rubber solution.....	8 fl. ounces

Triturate the zinc oxide with the oil of turpentine, add the petrol, and then shake up with the rubber solution (ordinary bicycle tube repair solution). A gray tint may be imparted by the addition of a little lamp-black.

#### Paint for Motor Car Tires.

Pipeclay .....	16 ounces
Spanish white.....	8 ounces
Precipitated chalk.....	6 ounces
Powdered tragacanth.....	4 ounces
Carbolic acid.....	2 drams
Oil of verbenia.....	2 drams
Water, a sufficiency to form a thick cream.	

Mix the powders well together and make into a cream with water, finally add the carbolic acid and perfume and well shake.

#### Aniline Coloring for Varnishes and Polishes.

The selection of an aniline dye for coloring varnishes or polishes for wood depends largely upon the character of the solvent employed in the preparation. However, a suitable selection can be made from the following list prepared some years ago by G. H. Hurst, author of the "Dictionary of Coal Tar Colors":

Dyes soluble in water and alcohol—Magenta, iodine green, rubin, rose bengal, safranine, corallin, navy blue, naphthol yel-

low, curcumein, chrysophenine, chrysoidine, regina purple, malachite green, acid magenta, cardinal, crimson, methyl eosin, coccin, methylene blue, benzyl blue, phosphine, brilliant yellow, metanil yellow, mandarin, methyl violet, brilliant green, Bismarck brown, vesuvine, cerise, erythrosine, eosin, phloxine, peacock blue, picric acid, aurantia, auramine, methyl orange, Hofman violet, acid violet and acid mauve.

Dyes soluble in water—Congo, brilliant scarlet, regina, wool blue, benzo-purpurine, quinoline yellow, fast brown, azo blue, Hessian purple, chrysamine, aniline grey, water blue, ponceau, orange, wool black, alkali blue, heliotrope, Congo corinth, acid yellow, azo violet, black blue, delta purpurine, azo acid, yellow, resorcin brown, Guernsey blue, fast red, Hessian yellow, nigrosine, Bavarian blue, scarlet, methyl orange, wacarar, China blue, brilliant blue, brilliant Congo, resorcin yellow, acid brown, benzoazurine, roseazurine, naphthol yellow, Guinea green, Hessian blue, archil red, curcumein, silver grey, capri blue, azo rubine and rubin S.

Dyes soluble in oil—Rosaniline base, Sudan II, picric acid, oil violet, butter yellow, violet base, oil green, oil orange, oil brown, Sudan I, aurantine base, oil yellow, oil crimson and oil scarlet.

#### Coloring for Fixed Oils, etc.

Olive oil may be colored red by macerating it with alkanet root (bruised) or alkannin. Alkanet root is quite generally used for coloring oils, ointments and plasters which, according to the United States Dispensatory, "are beautifully reddened by one-fortieth of their weight of the root. The best way to use it is to suspend the alkanet, after tying it in a piece of flannel in the melted fat." Oils and fats may also be colored by means of aniline dyes soluble in them. The commonest aniline bases in general use for this purpose are auramine, chrysoidine, safranin, fast blue, victoria blue, induline, methyl violet brand 6 B., malachite green, brilliant green, Bismarck brown and nigrosin. All kinds of shades can be obtained by suitable mixtures of these dyes. The bases are either sold in powder or in highly concentrated solution, or made up into small dice-shaped pieces by fusion with the proper quantity of stearin. They are also sold dissolved in oleine, and used in the manufacture of candles.

#### Artificial Coloring of Flowers.

A method employed by florists to impart a green color to the white petals of "carnation pinks" consists in allowing long-stemmed flowers to stand in water containing a green aniline dye. When the flowers are fresh they absorb the fluid readily, and the dye is carried to the petals. Where the original color of the flower is white, colored stripes can be produced upon the petals by putting the cut ends into water impregnated with a suitable aniline dye. Some dyes can thus be taken up by capillary action of the stem and deposited in the tissue of the petal. If flowers are placed over a basin containing a very small amount of ammonia in a bell glass, the colors will generally show some marked change. Many violet-colored flowers when so treated will become green, and if the petals contain several tints they will show greens where reds were, yellows where they were white, and deep carmine will become black. When such flowers are put into water they will retain their changed colors

for hours. If violet asters are moistened with very dilute nitric acid, the ray florets, it is said, become red and acquire an agreeable odor.

#### Reproducing Old Prints.

The following is a process employed to make lithographic fac-similes of old and rare prints: Prepare a bath as follows: Sulphuric acid, 3 to 5 parts (according to the antiquity of print, thickness of paper, etc.); alcohol, 3 to 5 parts; water, 100 parts. In this soak the print from five to fifteen minutes (the time depending on age, etc., as above), remove, spread face downward on a glass or ebonite plate, and wash thoroughly in a gentle stream of running water. If the paper is heavy, reverse the sides, and let the water flow over the face of the print as well. Remove carefully and place on a heavy sheet of blotting paper, cover with another, and press out every drop of water possible. Where a wringing machine is convenient and sufficiently wide, passing the blotters and print through the rollers is better than mere pressing with the hands. The print, still moist, is then laid face upward on a heavy glass plate (a marble slab or a lithographer's stone answers equally well), and smoothed out. With a very soft sponge go over the surface with a thin coating of gum arabic water. The print is now ready for inking, which is done exactly as in lithographing, with a roller and printer's or lithographer's ink, cut with oil of turpentine. Suitable paper is then laid on and rolled with a dry roller. This gives a reverse image of the print, which is then applied to a zinc plate or a lithographer's stone, and as many prints as desired pulled off in the usual lithographing method. When carefully done and the right kind of paper used, it is said that the imitation of the original is very perfect in every detail.

#### Transferring Newspaper Pictures.

A very weak solution of soft soap and pearlsh is used to transfer recent prints, such as illustrations from papers, magazines, etc., to unglazed paper, on the decalcomania principle. Such a solution is:

Soft soap.....	½ ounce
Pearlsh .....	2 drams
Distilled water.....	16 fl. ounces

Mix. The print is laid on a flat surface, such as a drawing board, and moistened with the liquid. The paper on which the reproduction is required is laid over this, and then a sheet of thicker paper is placed on the top, and the whole rubbed evenly and hard with a blunt instrument, such as the bowl of a spoon, until the desired depth of color in the transfer is obtained. Another and more artistic process is to cover the print with a transparent sheet of material coated with wax, to trace out the pictures with a point and to take rubbings of the same after powdering with plumbago.

#### Transferring Newspaper Print.

Hard soap.....	1 dram
Glycerin .....	30 grains
Alcohol .....	4 fl. drams
Water .....	1 fl. ounce

Mix. Dampen the printed matter with the solution by sponging, and proceed as directed in the process given above.



**Bleaching Ivory.**

Wash the ivory with a three per cent solution of perborate of sodium; then wipe off with lemon juice or a solution of citric acid.

**Bleaching Ivory.**

Treat the ivory alternately with a 2 per cent solution of perborate of sodium and a one per cent solution of oxalic acid, letting the ivory remain in each solution for one-half hour. Repeat the process a number of times, then rinse with water and wipe dry. It may be necessary, after bleaching the ivory, to repolish it. This is done by applying any white polishing paste with a woolen cloth, washing with castile soap, and after drying, rubbing with chamois.

**Bleaching Ivory.**

Ivory may also be bleached by placing it in a saturated solution of alum for an hour. Polish with a woolen cloth, and wrap in linen to dry. Peroxide of hydrogen is also recommended, the ordinary solution being employed with the addition of 1 ounce of aqua ammonia to the pint of solution. Warm, soak the ivory in the solution for 24 hours, wipe and polish with chalk.

**Oil for Floors.**

Neatsfoot oil.....	1 part
Cottonseed oil.....	1 part
Petroleum oil.....	1 part

Mix.

**Oil for Floors.**

Beeswax .....	8 parts
Water .....	56 parts
Potassium carbonate.....	4 parts

Dissolve the potash in 12 parts of water; heat together the wax and the remaining water till the wax is liquefied; then mix the two and boil together until a perfect emulsion is effected. Color, if desired, with a solution of annatto.

**Oil for Floors.**

Paraffin oil.....	8 parts
Kerosene .....	1 part
Lime water.....	1 part

Mix thoroughly. A coat of the mixture is applied to the floor with a mop.

**Cleaning Wedgwood Ware.**

A solution of lye or potash is about as effectual as anything one can use for cleaning Wedgwood ware. The most difficult parts to clean may be rubbed with sand soap or a little pumice stone. Sometimes a bath of sulphuric acid may be necessary. For stains from aniline dyes, fuchsine, marking ink, etc., use a solution of tartaric acid. For deposits of fluid magnesia, Parrish's syrup, Easton's syrup, etc., use hydrochloric acid. For most organic extracts and vegetable resins, a solution of potash. Tincture of cannabis indica, old paint and grease stains may be removed by chloroform.

**Etching Glass Tumblers.**

The fluid commonly used for etching glassware, and which may be employed for etching tumblers, is made as follows:

Sodium fluoride.....	1 ounce
Glacial acetic acid.....	10 drams
Water .....	25 ounces

Dissolve the sodium fluoride in the water and add the acetic acid.

The article to be etched is first coated with an etching varnish, which is scratched off where a pattern is desired, and then immersed in the solution. The fluid is sometimes applied by means of a rubber stamp.

**Etching Glass.**

Mix equal parts of ammonium fluoride and barium sulphate, and bring to the consistency of a soft paste with sulphuric acid. The mixture should be made in a receptacle of lead, and kept in a bottle of the same material, or of gutta-percha. The writing is done with a quill, and in about half a minute the writing is washed off. Care must be taken not to allow the ink to touch the skin, for it is a powerful caustic and produces painful and slow-healing sores.

**Non-Freezing Mixtures.**

The prevention of freezing in water pails and chemical fire extinguishers by Robinson, presented some time ago in "Industrial Engineering," contains figures showing in degrees Fahr. the freezing points of solutions containing varying proportions of sodium chloride and calcium chloride:

Lbs. per gal.	Sodium chloride.	Calcium chloride.
0.5	24°	29°
1.0	18	27
1.5	12	23
2.0	6	18
2.5	1	4
3.0	—3	—1
3.5	—8°	—8°
4.0	..	—17
4.5	..	—27
5.0	..	—39
5.5	..	—50
...	..	..

Calcium chloride is superior to sodium chloride in that it does not corrode steel tanks and barrel hoops. When calcium chloride is used, wooden barrels should first be well coated inside with asphaltum or a mixture of paraffin and resin, to prevent shrinkage of the staves. Calcium chloride attacks solder, and is therefore unsuitable for use in extinguishers of metal. A 40 per cent solution (sp. gr. 1.4) can be purchased on the market; when this is diluted with an equal quantity of water, the solution will not freeze at —9° F. It is recommended that when automatic sprinkler systems are installed in warehouses or other places of exposure during Winter, a calcium chloride solution be used, as this will do away with the necessity of maintaining a drypipe system and its attending risks, due to leaky valves and possible failure of the air supply. The system should be filled with a solution of 1.225 to 1.25 sp. gr. (3.36 to 3.76 lbs. of calcium chloride per gallon of solution), and a check valve installed to separate this from the source of the water supply.

Glycerin has been recommended for use in extinguishers, the addition of 3½ quarts to a standard extinguisher making a solution capable of withstanding —4° F., and 4 quarts a temperature of —10° F. It tends to disintegrate rubber, however.

Denatured alcohol-water solutions are stated to have the following values: 20%, 10° F.; 30%, —5° F.; 40%, —20° F.; 50%, —35° F.

**Anti-Freezing Mixtures for Automobiles.**

Most formulas for anti-freezing mixtures contain a percentage of glycerin, says the "Automobile Journal." A simple solution of alcohol, while it is not injurious in any way, lowers the boiling point of the water. Consequently on warm days, with the car standing and the motor running, the solution will tend to boil easily and evaporate. The boiling point of denatured alcohol is about 10° higher than that of wood alcohol.

The use of glycerin raises the boiling point of the solution. It is more expensive than alcohol and is slightly injurious to rubber, but all things considered, a combination of alcohol and glycerin in water is the most satisfactory.

The following anti-freezing mixture is for a temperature not lower than 5° below zero:

Wood alcohol.....	15 per cent.
Glycerin .....	15 per cent.
Water .....	70 per cent.

For a temperature not lower than 15° below zero:

Wood alcohol .....	17 per cent.
Glycerin .....	17 per cent.
Water .....	66 per cent.

**Anti-Freezing Solutions for Car Motors.**

There are three anti-freezing agencies generally used in the cooling water of car motors, calcium chloride, glycerin and alcohol (both wood and denatured), each of which is effective, but there is a well-founded preference for alcohol solutions because alcohol will not damage the metals of the water jacket or the water connections and it has practically no fault excepting a tendency to evaporate quickly. The other solutions also have some advantages and each user may in a measure consult his personal preferences in the selection of a cooling agency. However, a solution of calcium chloride is a very effective cooling agent but unless the chemically pure salt is used there is danger of corrosion of the metal with which it comes in contact. A solution of 5 lbs. of calcium chloride to each gallon of water will not freeze at any temperature above -35° F. A more convenient way to prepare the solution is to first make a saturated solution of calcium chloride and water, that is, mix with a quantity of water warmed to 60° F. all the calcium chloride the water will completely dissolve and use equal parts of this saturated solution and pure water in the cooling system of the motor. If chemically pure calcium chloride is used, no trouble will result from this solution.

Glycerin works satisfactorily as a cooling agent and as it will not crystallize in the water jacket it is preferable in this respect to calcium chloride; it has the further merit of not requiring any renewal during the season as it does not evaporate. It is therefore only necessary to add water to replace that which has evaporated from the mixture. The main fault ascribed to glycerin is its tendency to soften hose connections. Equal parts of glycerin and water are used. In using a glycerin solution care should be taken to thoroughly cleanse the jackets of any residue of crystals from calcium chloride solutions previously used, as this residue will thicken and cloud the glycerin solution.

Alcohol seems to be the best from several points of view and as denatured alcohol can now be obtained for about 50c. a gallon its price is no longer against it. Mixtures of one quarter alcohol and three quarters water will withstand freezing at 0° F.; mixtures of 3½ parts of alcohol and 6½ parts water freeze

at 15° F.; mixtures of 4 parts alcohol and 6 parts water at 25° F.

In addition to these straight mixtures of water and one anti-freezing element there are several combinations of three or more elements such as 1-5 alcohol, 1-5 glycerin and 3-5 water, or 4 parts water, 3 parts potassium carbonate and 2 parts glycerin, etc.

**Gas Igniter.**

Most of the "self-lighting bodies" for coal gas are the outcome of Döbereiner's discovery that spongy platinum is capable of igniting a mixture of hydrogen with oxygen or atmospheric air. Coal gas, however, cannot be ignited by spongy platinum, even when the latter is incandescent. Rosenfeld in 1888 discovered that a warm platinum wire becomes incandescent when held at the point of commingling of air and coal gas; by combining one or more platinum wires with some spongy platinum, he invented the first "self-lighter" for coal gas. Spongy platinum soon loses its highly porous character if exposed much to the heat of the flame, but this depreciation is minimized by using a porous refractory support for the finely divided platinum. To accomplish this end inventors have used different materials. One dipped "pills" of asbestos or meerschaum into platinum chloride solution, dried them, and reduced the chloride to metallic platinum by means of reducing gases. These pills were used in combination with a platinum wire, on Rosenfeld's principle. Another inventor dissolved platinum chloride and thorium nitrate together, and by dipping into this a cotton fabric which had been woven with fine platinum wires, and then burning out the cotton, an effective body was obtained, consisting of platinum wires intertwined with a mixture of thorium and platinum black. Butzke stitched such a body to the top of an incandescent mantle and in addition applied an "igniting line" of iridium from the top to the bottom of the mantle.

**Fly Drums.**

Roll a sheet of sticky fly-paper into a cylinder, with the sticky side in. Roll this cylinder in one thickness of crepe paper, which should extend about two inches beyond the open ends of the fly-paper drum. Cut the protruding edges of the crepe paper into a fringe and curl each tongue of the fringe inwardly. Run a twine or ribbon through the drum and suspend horizontally from the lighting fixtures, top of shelving, or from the ceiling, as may be desired. It is well known that light paper drapery will in itself draw and hold flies. The flies are attracted to the fringe of the drum and then crawl inside, where they are caught by the sticky interior and kept out of sight.

**Lawn Sand for Bugs and Slugs.**

Powdered quassia, 9 ounces; powdered cocculus indicus, 1.75 ounces; powdered green vitriol, 1.75 ounces; powdered sodium sulphate, 6.25 ounces; green peat moss, 25 ounces; soil, a sufficient quantity to make 100 ounces. The mixture is used by sprinkling thinly on the lawn and watering freely by means of a fine hose.

**Lawn Sand for Weeds.**

Ferrous sulphate, 75 ounces; ammonium sulphate, 15 ounces; Calais sand, 10 ounces. The ingredients should be very finely powdered together and then carefully sifted. The mixture should be kept in a cool, dry place, and if it should become hard must be finely powdered before use. In dry weath-

er, 3 or 4 ounces may be sprinkled over each square yard of lawn. In wet weather the quantity may be increased to double this amount. A little should be placed on the crowns of dandelions and plantains.

#### Coating for Lantern Screens.

Glycerin .....	1 pound
White glue.....	1 pound
Zinc oxide, French.....	2 pounds
Hot water.....	2 gallons

Apply while hot to the screen stretched on a smooth surface; the fabric should also be kept taut during drying. The mixture imparts a pliable coating which does not crack, and the screens can be rolled up without suffering injury. A gallon of the mixture will cover a screen 10 feet square.

#### Shoemaker's Invisible Cement.

Raw gutta-percha.....	1 part
Elastic glue.....	1 part
India rubber, shredded....	16 parts
Methylated ether.....	16 parts
Carbon disulphide.....	128 parts

Mix, and let stand for several days, agitating occasionally every day, until complete solution is effected. The "elastic" glue is merely good, strong glue, carrying some glycerin.

#### Wax for Parquetry Floors.

Yellow beeswax.....	5 parts
Carnauba wax.....	10 parts
Oil of turpentine.....	45 parts
Benzine .....	40 parts

Melt the wax together, remove from the fire, and after cooling down somewhat, add the oil of turpentine and benzine, and stir until cold. All that is needed to make a good furniture polish is to double the quantity of oil of turpentine, leaving out the benzine. According to the "Seifenfabrikant," this formula produces an excellent wax for inlaid or parquette floors.

#### Cleaning and Sharpening Files.

Files and rasps used for working tin and lead can be cleaned and sharpened in the following manner: Dip the file for a few seconds into concentrated nitric acid until reddish brown vapors commence to ascend lively, then rinse in water, rub with a sharp brush and imbed the file in sawdust or coal dust or dry it quickly for immediate use. A file clogged up by iron filings should be dipped into a watery solution of copper vitriol by which the filings are dissolved and copper precipitated in the form of a slimy sediment while the body of the file is attacked but little. Afterwards rinse the file in water, brush off, dip into nitric acid and conclude treatment as above. Files dulled by zinc filings are given a bath in diluted sulphuric acid, otherwise they are subjected to the same treatment. Clean all files used for working copper by means of nitric acid, but repeat the process several times, because the first time much copper is precipitated that adheres tenaciously to the body of the file. Files used for working wood are first put into hot concentrated sulphuric acid, rinsed, brushed, then dipped into lye of potash, rinsed and brushed again and finally dried. Drying can be accomplished best and quickest by pouring alcohol over the file and burning it off.

#### Removing Rust from Iron and Steel.

Make a mixture of lactic acid (1 part) and oil of spike (2 parts), and rub it upon the rust spots with a woolen cloth or tissue paper. On the following day the rust may be removed entirely with the aid of a little oil of spike. The iron is not affected in the least by this

treatment, which cannot be said of mixtures containing hydrochloric acid. Iron and steel surfaces are best polished with very fine emery paper and oxide of tin.

#### Styptic Paper.

Styptic paper is made by mixing, with the paper pulp, one part of solution of ferric chloride to an equivalent of pulp that will yield 4 parts of dry product, or 1 part of tannic acid to eight parts of finished product, and carefully drying. When made on a small scale, white absorbent or blotting paper may be used and made into pulp, to which the astringents are added, and then carefully dried. A small quantity of the prepared paper is bound over the cut.

#### Celluloid Varnish.

Celluloid .....	1 ounce
Acetone .....	10 ounces
Amyl acetate.....	10 ounces

Cut the celluloid into fine shavings, mix the two solvents and add it to them. Allow to stand in a moderately warm place until the celluloid has dissolved, keeping the container well corked. If a thicker varnish is desired, the proportion of celluloid may be increased, but experience proves that a thin film is more durable because more elastic. If desired, the varnish may be tinted by dissolving alcohol-soluble aniline dyes in the acetone.

#### Violin Varnish.

Copal, in coarse powder...	8 ounces
Camphor .....	1 ounce
Mastic .....	1 ounce
Dragon's blood.....	1 ounce
Canada balsam.....	1 fl. ounce
Strong methylated spirit..	40 fl. ounces
Powdered glass.....	8 ounces

Mix and warm gently, agitate well until the resins are dissolved, then allow to stand for several days. Decant the clear supernatant varnish. The glass is added merely as a mechanical clarifier to carry down any insoluble impurities in the resins.

## MISCELLANEOUS.

#### Waterproofing Compound.

Linseed oil.....	8 ounces
Boiled linseed oil.....	10 ounces
Suet .....	8 ounces
Yellow wax.....	8 ounces
Melt.	

#### Waterproofing Compound, Col. Hawker's.

Drying oil.....	1 pint
Burgundy pitch.....	1 ounce
Oil of turpentine.....	2 ounces

Melt over a slow fire, and add a few drops of lavender or thyme. Brush the boots repeatedly with the composition before the fire till they appear fully saturated.

#### Waterproofing Compound, Dr. Harvard's.

Wax .....	8 ounces
Rosin .....	4 ounces
Mutton suet.....	4 ounces

Mix. Boil together, and apply warm to new boots.

#### Canvas, to Make Waterproof.

White lead, 4 pounds; oil of turpentine,  $\frac{1}{4}$  part; zinc sulphate,  $\frac{1}{2}$  ounce; sugar of



lead,  $\frac{1}{2}$  ounce; and enough boiled oil to make the mixture thin; apply with a paint brush to the canvas or linen, which must be well washed to take out the stiffening, well dried and stretched tight on a frame while being painted.

#### Waterproofing Compound, for Canvas, etc., Castley's.

Gutta-percha, 3 parts, is dissolved in resin spirit, 9 parts, at a heat of  $120^{\circ}$  to  $140^{\circ}$  F., stirring occasionally.

#### Waterproofing Compound, for Cloth.

The cloth is alternately dipped in a solution of lead acetate with a little gum, and solution of alum.

#### Waterproofing Compound, for Hats.

Boil 8 pounds of shellac, 3 pounds of frankincense and 1 pound of borax in sufficient water.

Mix and boil together.

#### Waterproofing Compound, for Leather, etc.

Cut 3 drams of India rubber into small pieces, soak them for 24 hours in a solution of common soda; dissolve the mixture and 3 ounces of asphaltum in 12 ounces of camphine, then add  $\frac{1}{2}$  ounce of boiled linseed oil.

#### White Cream for Patent Leather.

Beeswax .....	2 ounces
Castile soap.....	2 ounces
Turpentine .....	5 ounces
Water .....	5 ounces

The soap and wax are to be well mixed with the turpentine and allowed to stand for 24 hours, after which the water (boiling) is added, and the whole thoroughly mixed. This is a good furniture cream as well as a boot cream.

#### Waterproofing, for Sailcloth.

Grind 96 pounds of English ochre with boiled oil, and add to it 16 pounds of black paint. Dissolve 1 pound yellow soap in 1 pail of water on the fire, and mix it, while hot, with the paint. Lay this composition, without wetting it, upon the canvas as stiff as can conveniently be done with the brush, so as to form a smooth surface; the next day, or the day after (if the latter, so much the better), lay on a second coat of ochre and black, with a very little, if any, soap; allow this coat a day to dry, and then finish the canvas with black paint.

#### Laundry Polish.

Melt 5 parts of stearic acid, add 5 parts of absolute alcohol, and triturate the mixture with 95 parts of wheat starch. Starch

prepared from this takes easily a fine polish. The polishing irons should be thoroughly cleaned immediately after use.

#### Laundry Starch Gloss.

Spermaceti .....	$1\frac{1}{4}$ ounces
Gum arabic.....	$1\frac{1}{4}$ ounces
Borax .....	$1\frac{1}{4}$ ounces
Glycerin .....	$\frac{1}{2}$ ounces
Distilled water.....	$1\frac{1}{2}$ pints

Melt the spermaceti with the borax and incorporate the gum dissolved in the water and glycerin. If desired to use with starch mix  $\frac{1}{2}$  teaspoonfuls with  $\frac{1}{2}$  ounces of boiling starch.

#### Liquid Gloss Starch.

Borax, saturated solution, 2 parts; tragacanth mucilage, 1 part; mix. One tablespoonful to 1 pint of starch.

#### To Improve Starch.

To each bowl of starch, add 1 teaspoonful of Epsom salt, and dissolve in the usual way by boiling. Articles starched with this will be stiffer, and will be rendered to a certain degree fireproof.

#### Gloss Starch.

Starch .....	1 pound
Borax .....	1 dram
Common salt.....	10 grains
Gum arabic.....	1 dram
Stearin .....	2 drams

Mix all together and prepare like ordinary starch.

#### Gloss Starch.

Borax, powdered.....	1 pound
Paraffin. ....	2 ounces
Starch, powdered.....	3 pounds

Melt the paraffin and pour on the borax in a warmed mortar. Mix well and add the starch.

#### Gloss Starch.

Saturated solution of borax .....	2 pounds
Mucilage of tragacanth...	8 ounces
Mucilage of acacia.....	8 ounces

Mix. Use a tablespoonful to a pound of starch.

#### Gloss Starch.

Gum arabic.....	5 ounces
Borax .....	5 ounces
Glycerin .....	8 ounces
Spermaceti .....	4 ounces
Water .....	4 pints

Mix. Boil together. Use one or two tablespoonfuls to a pound of starch.

# PART EIGHT.

## Beverages and Fruit Products.

### SODA WATER PRODUCTS.

#### Soda Foam.

Ground soap bark..... 8 ounces  
Boiling water.....  $\frac{1}{2}$  gallon  
Mix and let stand 24 hours and filter.

#### Soda Foam.

Soap bark..... 8 ounces  
Boiling water.....  $\frac{1}{2}$  gallon  
Glycerin ..... 8 ounces  
Alcohol ..... 8 ounces

Pour the water on the soap bark, let stand for 24 hours, filter and add the glycerin and alcohol.

This makes a more lasting foam and keeps better than that made by the preceding formula. Use from  $\frac{1}{2}$  to 2 ounces to the gallon of syrup.

#### Soda Foam.

Sarsaparilla root fine  
ground ..... 8 ounces  
Quillaja bark..... 8 ounces  
Diluted alcohol, enough to  
make ..... 4 pints

Prepare by percolation.

Of this 1 to 2 ounces is sufficient to a gallon of syrup to produce an excellent foam. It is quite tasteless and entirely supersedes the use of gum, gelatin or egg albumen, which were formerly in vogue. Tincture of quillaja (U. S. P.) or fluidextract of quillaja can be purchased and may be used for the same purpose; the former may be used in the proportion of 1 ounce in 2 gallons of syrup, or fluidextract; 1 ounce is enough for 5 to 10 gallons.

#### Soda Water Syrup.

White granulated sugar... 35 av. pounds  
Distilled water..... 20 pints

Pour the water into a kettle, add the sugar and bring the mixture to a boil, stirring constantly. Then remove from the fire and strain while hot. This syrup will not usually crystallize in cold nor ferment in warm weather.

Either rock candy syrup, or simple syrup made according to the foregoing formula, can be used where "syrup" is recommended.

#### Soda Water Syrup.

Take a large percolator, holding 3 gallons or more, close the lower orifice with a layer of cotton, and fill it with granulated sugar. Now pour water on the sugar until the percolator is filled. Allow to drip. The next morning fill up again with sugar and water. Take care that there is always a layer of water over the sugar in the percolator and always fill the percolator at least half full with sugar. At the end of a week allow the syrup to drain out and clean the apparatus. This produces, without heat and but little labor, an excellent syrup for the soda water fountain.

#### Red Coloring for Syrups.

Cochineal ..... 1 ounce  
Alum .....  $1\frac{1}{2}$  drams  
Cream of tartar.....  $1\frac{1}{2}$  drams  
Water, quantity sufficient.  
Alcohol ..... 1 ounce

Pulverize the cochineal, add the alum and cream of tartar, then gradually add 11 ounces of water, percolate through cotton, add the alcohol and enough water to make the liquid measure 1 pint.

#### Fruit Coloring.

While many use carmine, cudbear, or other artificial colorings, German black cherry juice, or black raspberry juice and caramel are suggested as being practically all the colorings that may be needed for soda water.

#### Blue Color for Syrups.

Dark blue..... 3 ounces  
Sugar ..... 1 ounce  
Water, enough to make... 1 pint  
Mix and filter.

#### Brown Color for Syrups.

Caramel is the best coloring for syrups. It is advisable to mix the caramel with  $\frac{1}{4}$  its volume each of glycerin and of water. Diluted in this way it can be measured more easily.

#### Carmine Coloring for Syrups.

Carmine No. 40..... 1 ounce  
Ammonia water..... 4 ounces  
Glycerin ..... 3 ounces  
Water, enough to make... 2 pints

Dissolve the carmine in the ammonia water, add the glycerin and warm on a water bath until the odor of ammonia has disappeared. Then add the water and filter.

#### Grass Green Coloring for Syrups.

Lawn grass, freshly cut... 5 ounces  
Alcohol, enough to make... 1 pint

Chop the grass fine and add the alcohol. Express after 24 hours and filter.

#### Carmine Pink Coloring for Soda Water.

Use a solution of carmine coloring and dilute with water until the desired shade is obtained.

#### Red Coloring for Syrups.

Ground alkanet root..... 3 ounces  
Alcohol, enough to make.. 1 pint

Mix and macerate, then express and filter.

#### Red Coloring for Syrups.

Powdered cochineal..... 1 ounce  
Potassium carbonate..... 2 ounces  
Water, a sufficient quantity.  
Cream of tartar..... 6 ounces  
Alum .....  $\frac{1}{2}$  ounce  
Alcohol ..... 4 ounces

Dissolve the potassium carbonate in 24 ounces of water and add the cochineal. Macerate for 2 days. Add the cream of tartar and alum, filter, and add enough water through the filter to obtain 28 ounces. Then add the alcohol.

#### Red Coloring for Syrups.

Ground red saunders..... 3 ounces  
Alcohol ..... 1 pint

Mix and macerate 2 days, then express and filter.

**Yellow Coloring for Syrups.**

Turmeric ..... 2 ounces  
Diluted alcohol..... 1 pint

Mix and macerate, then express and filter.

**Gold-Yellow Coloring for Syrups.**

Saffron, powdered.....1½ ounces  
Diluted alcohol..... 1 quart

Mix and macerate for 2 days, then express and filter.

**Yellow Coloring for Syrups.**

Ground fustic..... 3 ounces  
Diluted alcohol..... 1 pint

Mix and macerate, then express and filter.

**Solution of Acid Phosphate.**

Sodium phosphate..... 1 ounce  
Phosphoric acid, syrupy... 2 fl. ounces  
Water ..... 1 quart

Mix and dissolve.

**Solution of Acid Phosphate.**

Phosphoric acid, syrupy... 1 pound  
Water, enough to make... 1 gallon

Mix and filter.

**Solution of Acid Phosphate.**

Potassium phosphate..... 1 dram  
Magnesium phosphate..... 3 drams  
Sodium phosphate..... 2 drams  
Calcium phosphate..... 4 drams  
Phosphoric acid, syrupy... 1 pound  
Water, enough to make... 1 gallon

Mix dissolve, filter.

**Solution of Citric Acid.**

Citric acid..... 8 ounces  
Water, enough to make... 1 pint

Mix and dissolve.

**Apple Syrup.**

Prepare the apples as directed for making pineapple syrup.

**Apricot Syrup.**

Apricot pulp..... 2 quarts  
Syrup, enough to make... 2 gallons  
Solution of phosphoric acid 2 ounces

Mix all together and pass through a fine hair sieve.

**Apricot Syrup.**

Apricot juice..... 1 quart  
Syrup ..... 3 quarts  
Solution citric acid..... 1 ounce

Mix. Color light orange.

**Banana Syrup.**

To each pound of banana pulp add gradually the same weight of hot water, heat gently, strain, and add sugar three pounds. Dissolve.

**Banana Syrup.**

Banana pulp..... 1 quart  
Syrup ..... 3 quarts  
Solution of citric acid.... 1 ounce

Mix and pass through a fine sieve.

**Banana Syrup.**

Oil of banana..... ½ ounce  
Solution of citric acid.... 1 ounce  
Syrup, enough to make... 1 gallon

Mix.

**Blackberry Syrup.**

Prepared from the ripe fruit in the same way as raspberry syrup. The addition of about 4 ounces, or more, of French brandy to one gallon greatly improves the syrup.

**Calisaya Syrup.**

Tincture of cinchona com-  
pound ..... 4 ounces  
Syrup, enough to make... 1 gallon  
Mix.

**Calisaya Syrup.**

Quinine bisulphate..... 2 drams  
Syrup ..... 1 gallon  
Red coloring, enough to tint.

Mix and dissolve.

**Calisaya Tonic.**

Quinine bisulphate, 2 drams to 1 ounce  
Aromatic elixir..... 1 gallon  
Red coloring, enough to tint.

Mix and dissolve.

This syrup contains 25 per cent. of alcohol.

**Calisaya Tonic.**

Calisaya bark..... 4 ounces  
Gentian ..... 1 ounce  
Orange peel..... 2 ounces  
Cinnamon ..... 1 ounce  
Diluted alcohol..... 4 pints  
Syrup, enough to make... 1 gallon

Reduce the drugs to fine powder and macerate them in the diluted alcohol for 3 days, then filter and add the syrup. Add red coloring to suit.

**Capillaire Syrup.**

Orange juice..... 1 pint  
French brandy..... 1 pint  
Solution of acid phosphate 1 ounce  
Syrup, enough to make... 1 gallon  
Color yellow.

Mix.

**Celery Syrup.**

Tincture of celery seed... 2 ounces  
Lemon juice..... 2 ounces  
Pineapple juice..... 1 pint  
Syrup, enough to make... 1 gallon

Mix.

**Cherry Syrup.**

Cherry juice, 'fermented  
and filtered..... 1 quart  
Water ..... 1 quart  
Sugar ..... 7 pounds  
Solution of citric acid.... 1 ounce

Dissolve the sugar by heat, in the water, then add the cherry juice and solution of citric acid.

**Cherry Syrup.**

Crush the cherries, strain; to each pint of juice add 1 pound of sugar and a dram or two of solution of citric acid. Heat to the boiling point and store in sterilized bottles.

**Cherry Phosphate Syrup.**

Cherry juice..... 3 pints  
Sugar ..... 6 pounds  
Water ..... 1 pint  
Solution of acid phosphate 4 ounces

Mix the first three ingredients, bring to boil, and when cool, add the solution of acid phosphate.

**Chocolate Syrup.**

Fountain chocolate..... 1 pound  
Syrup ..... 1 gallon  
Extract of vanilla, enough.

Shave the chocolate into a gallon porcelain evaporating dish and melt with a gentle heat, stirring with a thin-bladed spatula. When melted, remove from the fire and add one ounce of cold water, mixing well. Add gradually one gallon of hot syrup and strain; flavor to suit. Use one ounce of the syrup to a mug.



**Chocolate Syrup.**

Chocolate (of good quality) .....	2 pounds
Sugar (granulated).....	3½ pounds
Water .....	6 pints
Extract of vanilla.....	½ ounce

Break the chocolate fine and mix with the water, then bring to a boil, and continue the heat for a few minutes, until the mixture is free from lumps. The mixture should be constantly stirred while heat is applied. Add the sugar and dissolve, and strain through a fine sieve while hot. If too thick when cold, add sufficient water, and if not sweet enough to suit the taste, add simple syrup; add the extract of vanilla when cold. The important point is to stir well, and not scorch the chocolate.

**Chocolate Syrup.**

Baker's vanilla chocolate..	½ pound
Baker's commercial chocolate .....	1 pound
Cornstarch .....	6 ounces
Hot water.....	2 gallons
Simple syrup.....	3 quarts

Dissolve the chocolate in hot water, using great care not to scorch it. Mix the cornstarch with cold water. Before adding the cornstarch see that the chocolate is thoroughly dissolved, and brought to a boiling heat; then add the cornstarch and boil well, that it may be sufficiently cooked to prevent any starchy taste. Strain through a sieve to remove coarser particles. When replenishing the apparatus be sure to strain the chocolate syrup again, using a coarser strainer. Dispense hot and keep the cream on the counter to reduce the temperature. In dispensing the syrup, sufficient cream should be put into the cup first; add the syrup, then sweetening if necessary, and mix with the stream of carborated water from the draught tube.

**Chocolate Syrup.**

Selected chocolate, 1 pound; water, 4 pints. Have the chocolate rubbed well to powder, adding 4 pounds sugar; add water and bring to boiling point, with constant stirring; remove from the source of heat; continue to stir for 20 minutes when cold add extract of vanilla, 1 ounce; essence of cinnamon, ¼ ounce, and enough thin syrup to make 1 gallon.

**Chocolate Syrup.**

Confectioners' chocolate... ½ pound
Hot water..... 2 quarts
Condensed milk..... 1 can
Granulated sugar..... 5 pounds
Whites of two eggs.
Extract of vanilla..... 1 ounce
Gum foam..... 1 ounce

The syrup should be prepared in a porcelain-lined evaporating dish. Cut the chocolate fine into the dish, apply heat, and rub chocolate with a pestle until a smooth paste is obtained, to which gradually add the water, (boiling hot), stirring constantly; then stir in the condensed milk and sugar until both are dissolved; set aside to cool. When cold, skim off the fat, particles of chocolate, etc., floating on the surface, add the whites of 2 eggs, previously well beaten, the extract of vanilla and gum foam, and strain through muslin. The syrup is then ready for use.

**Chocolate Syrup.**

Chocolate, ½ pound, grate into a porcelain-lined kettle; stir in 1 ounce cornstarch; add slowly while stirring, 2 quarts of water; bring to a boil. Dissolve in this 6 pounds sugar. Strain, when cold add extract of vanilla, 1 ounce.

Condensed milk, 1 can, and whites of 2 eggs; and gum foam may be added if desired.

**Chocolate Cream Syrup.**

Chocolate (for fountain use) .....	4 ounces
Cocoa .....	2 ounces
Cold water.....	11 ounces

When evenly suspended let stand until dissolved, or about 1 hour, then add:

Condensed milk.....	1 can
Simple syrup.....	1 gallon

Stir well, boil 1 minute and use without straining.

**French Phosphated Chocolate Syrup.**

Finest French chocolate...	1 pound
Sugar .....	6 pounds
Water .....	½ gallon
Solution of phosphoric acid	1 ounce
Vanilla extract.....	½ ounce
Foam .....	1 ounce

Mix, bring to boil, strain, add the vanilla extract and foam.

**Chocolate Syrup.**

Chocolate, in powder.....	½ pound
Granulated sugar.....	7 pounds
Water .....	4 pints
Extract of vanilla.....	1 to 2 ounces

Rub the chocolate thoroughly with the sugar in an enameled iron pot, add the water, stir, and bring to a boil. When cool, add extract of vanilla.

**Chocolate Syrup.**

If a thick syrup is required, 4 ounces of corn starch, rubbed up with a little water, may be added, before boiling, to the chocolate and sugar mixture, and using the method directed in the preceding formula. The addition of one or two cans of condensed milk greatly increases the flavor of this syrup. The milk should be added before boiling up.

The chocolate syrup, made according to this formula (or the preceding), is most satisfactory. The mixing of the powdered chocolate with the sugar prevents lumping, and the resulting syrup is perfect and needs no straining.

**Cinchona Syrup.**

Use the same formulas as those given for "Calisaya Syrup," etc.

**Cinnamon Syrup.**

Oil of cinnamon.....	2 drams
Magnesium carbonate.....	2 drams
Water .....	4 pints
Sugar .....	6 pounds

Mix the oil with the magnesium, add the water gradually, filter, and in the filtrate dissolve the sugar without heat.

**Cinnamon Syrup.**

Oil of cinnamon.....	2 drams
Alcohol .....	8 ounces
Syrup, enough to make...	1 gallon

Mix the oil with the magnesium, add the and the syrup, shaking after each addition.

This formula, as well as the preceding formula, are typical for all syrups made from essential oils; the syrup made by the preceding formula, however, contains no alcohol, while the syrup made according to this formula contains 8 ounces of alcohol.

**Coca Syrup.**

Wine of coca.....	1 pint
Cane sugar or rock candy syrup .....	7 pints

Mix. This syrup has a pleasant, very slightly bitterish taste.

**Coca Syrup.**

Fluidextract of coca..... 4 ounces  
 Essence of vanilla..... 1 ounce  
 Syrup ..... 1 gallon  
 Color brown.

Mix.

**Coca Syrup.**

Fluidextract of coca..... 4 ounces  
 Essence of vanilla..... ½ ounce  
 Syrup of coffee..... 1 pint  
 Syrup, enough to make... 1 gallon

Mix.

**Coca Kola Syrup.**

Fluidextract of coca..... 2 ounces  
 Fluidextract of kola..... 2 ounces  
 Tincture of vanilla..... 1 ounce  
 Syrup, enough to make... 1 gallon  
 Color, as desired.

Mix.

**Coffee Syrup.**

Mocha coffee..... 4 ounces  
 Java coffee..... 12 ounces  
 Granulated sugar..... 9 pounds  
 Water, sufficient to make. 1 gallon

Mix the previously roasted and finely ground coffee, and transfer it to a suitable vessel; macerate with 3 quarts of water over night; steam, without boiling, for 2 hours; then strain. Let stand for about two hours, then pour off the clear liquid through a muslin strainer, taking care not to let any of the muddy precipitate enter the strainer. Make up to 1 gallon with water and filter for the last time through a fine muslin strainer. Dissolve the sugar in the infusion without heat.

**Coffee Syrup.**

Mocha coffee..... 8 ounces  
 Java coffee..... 8 ounces  
 Alcohol ..... 1 pint  
 Water ..... 4 pints  
 Rock candy syrup, sufficient to make..... 2 gallons

Percolate the previously roasted and ground coffee with mixture of alcohol and water, and add the percolate to the syrup.

**Coffee Syrup.**

Best Java coffee..... 1 pound  
 Moisten with brandy, percolate with boiling water till 3 pints have passed, add and dissolve in the percolate 6 pounds sugar, and make up to 1 gallon with water. Finally add 1 ounce of foam.

**Coffee Syrup.**

Fluidextract of coffee..... 8 fl. ounces  
 Tartaric acid..... 1 dram  
 Simple syrup, sufficient to make ..... 1 gallon

Dissolve the acid in a little water and mix with the syrup.

**Coffee Syrup.**

Java coffee, 2 pounds (ground very finely); mix 2 pints of alcohol with 6 pints of water, moisten the coffee, pack it in a suitable percolator and pour on the rest of the mixture to thoroughly exhaust the coffee. At a very gentle heat evaporate the alcohol and to the remaining liquid add 4 pounds of sugar. Make to the measure of 1 gallon by adding thin, plain syrup.

**Coffee Syrup.**

Java coffee, finely ground. 8 ounces  
 Mocha coffee, finely ground 8 ounces  
 Water ..... 1 gallon  
 Glycerin ..... 4 ounces  
 Sugar ..... 10 pounds

Mix the glycerin with a pint of water and macerate the coffee in the mixture for 8 hours. Then pour on the remainder of the water, heated to boiling, and allow the mixture to stand till the coffee settles. Pour off the infusion and dissolve in it the sugar without heat.

The addition of eight ounces of French brandy greatly increases the flavor of this syrup.

**Crab Apple Syrup.**

Sweet cider..... 1 gallon  
 Sugar ..... 7 pounds  
 Extract of malt..... 4 ounces  
 Solution of citric acid... 1½ ounces

Bring the cider to a boil, add the sugar and dissolve. When cool add the extract of malt and solution of acid.

**Cream Syrup (Avoid Heat).**

Cream ..... 1 pint  
 Milk ..... 1 pint  
 Sugar ..... 1 pound

Mix and dissolve the sugar in the milk and cream by agitation.

**Cream Syrup (Avoid Heat).**

Condensed milk (without sugar) ..... 1 pint  
 Water ..... 1 pint  
 Sugar ..... 1½ pounds

Mix.

**Cream Syrup (Avoid Heat).**

Condensed milk (with sugar) ..... 1 can or ½ pint  
 Water ..... ½ pint  
 Thin syrup..... 1 pint

Mix.

**Whipped Cream Syrup.**

Acacia ..... 2½ pounds  
 Crushed sugar..... 7½ pounds  
 Tincture of quillaja..... 10 fl. ounces  
 Benzoic acid..... 1½ drams  
 Hot water..... 5 pints

Dissolve the finely sifted gum in the hot water; strain, then dissolve the sugar in the clear solution with the aid of a gentle heat, and add lastly the tincture of quillaja, or soap bark, and benzoic acid.

**Creosote Syrup.**

Creosote ..... ½ ounce  
 Cognac brandy..... 2 pints  
 Simple syrup..... 1 gallon  
 Tincture of peppermint... 1 ounce

Mix the creosote with the brandy and tincture and gradually add the syrup, shaking after each addition.

**Currant Syrup.**

Red currant juice..... 1 pint  
 Syrup ..... 7 pints

Mix.

**Currant Syrup.**

Crush red and black currants, express and strain. To each pint of juice add 1 pint of water and 4 pounds of sugar. Dissolve by gentle heat. Color red if desired.

**Egg Phosphate Syrup.**

Lemon or orange syrup ..... 1 to 1½ ounces  
 Compound solution of acid phosphates... 1 to 2 fl. drams  
 Shaved ice..... 2 ounces  
 Egg ..... 1 ounce

Put into a tumbler in the above order, add ice water, 2 ounces, shake vigorously or pour the mixture from one tumbler to another

several times; strain, and fill the glass with carbonated water.

Lime and lemon juice are kept in bottles, and are usually dispensed by taking  $\frac{1}{2}$  ounce of the juice, 1 ounce of syrup and enough carbonated water to fill a mineral water glass.

Limes, lemons and oranges are used to furnish limeade, lemonade and orangeade. The fruit is cut, the juice pressed, a few drops of flavor of the fruit peel added; if oranges are used, a little citric acid solution is employed, as also  $\frac{1}{2}$  to 2 ounces syrup, and glass filled with carbonated water.

#### Egg Phosphate Syrup.

Lemon syrup..... 2 pints  
Orange syrup..... 2 pints  
Eggs ..... 32  
Phosphoric acid (U. S. P.) ..... 1 to 2 fl. ounces

Mix. Thoroughly incorporate the mixture with a beater. Draw  $\frac{1}{2}$  to 2 fluid ounces into a large tumbler and fill with carbonated water.

#### Egg Sour Syrup.

Juice of one lemon,  
1 egg,  
Syrup ..... 1 to 2 ounces

Shake with shaved ice and fill the glass with carbonated water, strain.

#### Egg Grape Phosphate.

Orange syrup..... 2 ounces  
Grape juice..... 1 ounce  
1 egg,  
Solution of acid phosphate ..... 2 or 3 dashes

Shake with shaved ice, fill the glass with carbonated water and strain.

#### Egg Lemon.

1 egg,  
Lemon syrup..... 1 to 2 ounces  
Solution of acid phosphate ..... 2 or 3 dashes

Shake with shaved ice, fill with carbonated water, strain.

#### Egg Lemonade.

1 egg,  
Juice of 1 lemon,  
Syrup ..... 1 ounce

Shake with shaved ice, fill the glass with carbonated water, strain.

#### Egg Pineapple.

1 egg,  
Pineapple syrup..... 1 or 2 ounces  
Solution of acid phosphate, enough.

Shake with shaved ice, fill the glass with carbonated water, strain.

#### Egg Fruit Soda.

Take any fruit syrup in place of pineapple and mix as directed in the preceding.

#### Egg Vichy (or Seltzer).

1 egg,  
Water ..... 1 ounce

Shake with shaved ice, fill with vichy or seltzer water, and strain.

#### Fruit Phosphates Syrup.

Strawberry syrup..... 8 fl. ounces  
Pineapple syrup..... 8 fl. ounces  
Cherry syrup..... 8 fl. ounces  
Pear syrup..... 8 fl. ounces  
Dilute phosphoric acid or solution of acid phosphate. 1 fl. ounce

Mix.

#### Framboise Syrup.

Raspberry syrup..... 1 pint  
Currant syrup..... 2 pints

Mix.

#### Syrup of Fruit (Tutti-Frutti Syrup).

Under this name any combination of 2 or more fruit syrups may be dispensed. The dispenser should make his own combination, and give it a fancy name.

#### Ginger Syrup.

Ginger ale extract (any good make)..... 3 ounces  
Solution of citric acid (1 to 16).....  $\frac{1}{2}$  ounce  
Foam ..... 1 ounce  
Syrup, enough to make... 1 gallon  
Mix and color with caramel.

#### Ginger Syrup.

Tincture of ginger (U. S. P.) or soluble essence ginger (Nat. Formulary) .....  $\frac{1}{2}$  to 1 fl. ounce  
Simple syrup..... 2 pints  
Mix.

#### Ginger Syrup.

Tincture of ginger (U. S. P.).....  $\frac{1}{2}$  fl. ounce  
Pure strained honey..... 4 fl. ounces  
Simple syrup..... 20 fl. ounces  
Mix. The honey must be pure and free from any additions whatever. No foam extract or acid solution is needed.

#### Ginger Syrup.

Extract of Jamaica ginger 1 dram  
Hot plain syrup..... 3 ounces  
Mix with stream of carbonated water from the draught tube.

#### Ginger Ale Syrup.

Ginger ale..... 2 pints  
Essence of lemon peel....  $\frac{1}{2}$  fl. ounce  
Citric acid solution.....  $\frac{1}{4}$  fl. ounce  
Mix. One and one-half to two ounces of this syrup in a glass with carbonated water, will make a very satisfactory product.

#### Ginger Syrup.

Tincture of ginger..... 4 ounces  
French brandy..... 8 ounces  
Syrup, enough to make... 1 gallon  
Mix.

#### Grape Syrup.

Crush any quantity of grapes in a mortar, strain and express. To each pint of juice add 1 ounce of alcohol,  $\frac{1}{2}$  pint of water and 2 pints of sugar. Dissolve without heat.

#### Grape Syrup.

Grape juice..... 1 quart  
Solution of citric acid.... 1 ounce  
Syrup, enough to make... 1 gallon  
Mix.

#### Grape Syrup.

Essence of lemon..... 2 fl. drams  
Brandy ..... 8 fl. ounces  
Tincture of sandalwood... 2 fl. ounces  
Simple syrup, enough to make ..... 1 gallon  
Mix.

#### Grenadine Syrup.

Extract of grenadine..... 2 ounces  
Syrup ..... 1 gallon  
Liquid foam and red coloring, enough.  
Solution of citric acid.... 1 ounce  
Mix.



**Hock and Claret Syrup.**

Hock wine (or claret).... 1 pint  
Syrup ..... 2 pints  
Mix.

**Imperial Syrup.**

Raspberry and orange syrups, of each, equal parts. Mix.

**Java Tonic.**

Compound tincture of cin-  
chona ..... 2 ounces  
Coffee syrup..... 2 pints  
Vanilla syrup..... 1 pint  
Syrup, enough to make... 1 gallon

Mix. Solution of acid phosphate is some-  
times added.

**Kola Syrup.**

Fluidextract of kola..... 1 ounce  
Claret wine.....1½ pints  
Raspberry syrup..... 2 pints  
Solution of citric acid... 2 ounces  
Syrup, enough to make... 1 gallon  
Carmine solution, q. s., to color.

Mix.

**Kola Syrup.**

Fluidextract of kola..... 1 ounce  
Calisaya tonic..... 2 pints  
Catawba wine..... 2 pints  
Syrup, enough to make... 1 gallon  
Carmine coloring,

Mix. A dash of solution of acid phosphate  
may be added to the syrup when dispensed.

**Kola and Fruit Syrup.**

Fluidextract of kola..... 2 ounces  
Grape juice..... 2 pints  
Pineapple syrup..... 2 pints  
Lemon syrup..... 2 pints  
Raspberry syrup..... 2 pints  
Red coloring, q. s.

Mix.

**Lemon Syrup.**

A popular method and a good one is:  
Take 4½ pounds sugar, 1 pint water and  
sufficient fruit to yield 1 pint juice. Grate  
off the yellow rind of the fruit, beat it up  
with about three times its bulk of sugar and  
an ounce of alcohol, and pack lightly in a  
percolator. Pour on the water gradually until  
the sugar has been dissolved and the liquid  
passed through. Express the juice and mix  
with the percolate; then add the remainder  
of the sugar; dissolve by agitation without  
heat, and strain.

**Lemon Syrup.**

Grate off yellow rind of lemons and beat  
it up with sufficient granulated sugar. Ex-  
press the lemon juice, add to each pint of  
juice 1 pint of water a 15 pounds of granu-  
lated sugar, including that rubbed up with  
the rind. Warm until dissolved, and strain.

**Lemon Syrup.**

Grate the peel of 12 lemons, add ½ pint of  
water, heat nearly to the boiling point, ex-  
press and strain. Express the juice of the  
lemons from which the peel has been re-  
moved, mix with the solution from the peel,  
and add enough simple syrup or rock candy  
syrup to make 1 gallon. If not sufficiently  
tart, add a small quantity of solution of  
citric acid.

**Lemon Syrup.**

The peel of 10 or 12 lemons is bruised with  
one-half its weight of sugar in a wedgwood  
mortar, and then added to 1 gallon of simple  
or rock candy syrup. Allow to stand 2 to  
4 hours and strain.

**Lemon Syrup.**

One dozen select fruit may be cut and  
bruised in a wedgwood mortar, add 4 pints  
of hot water, let the mixture stand at a very  
gentle heat for 20 minutes, add 6 pounds of  
sugar, dissolve, express, and make up to 1  
gallon by the addition of thin syrup. This  
syrup should not be used with cream.

**Lemon Syrup.**

Grate off the yellow rind of the desired  
number of lemons, beat it with one-half its  
weight of granulated sugar in a wedgwood  
mortar. To each pint of the expressed juice  
add an equal volume of water, and in this  
dissolve 3 pounds of granulated sugar, includ-  
ing that used in beating with the rind; warm  
until solution is effected, avoiding excess of  
heat, and strain.

**Lemon Syrup.**

The peels of lemons, thinly cut, are placed  
in suitable glass bottles, closely pressed and  
covered with deodorized alcohol, allowed to  
stand 10 days with frequent shaking, poured  
off, a second quantity of deodorized alcohol  
being used in the same manner, obtaining as  
the product 1 pint from each pound of the  
peel. The essence thus made may be used in  
the proportion of 2 ounces to 1 gallon of  
plain syrup, or more, to suit the taste.

**Lemon Syrup.**

Tincture of lemon..... 1 ounce  
Tincture of senega..... 20 drops  
Citric acid..... 2 drams  
Syrup ..... 30 ou ces

Dissolve the acid in ½ ounce of water,  
mix with the syrup, and add the tinctures.

**Lemon Syrup.**

Dissolve 6 drams tartaric acid and 1 ounce  
gum arabic in 1 gallon simple syrup, and  
flavor with 1½ fluid drams best oil of lemon,  
or if preferred, flavor with saturated tinc-  
ture of lemon peel in cologne spirit.

**Lemon Syrup.**

Simple syrup..... 1 gallon  
Extract of lemon..... ½ ounce  
Citric acid..... 1 ounce

Mix and dissolve.

**Lemon Syrup.**

Oil of lemon..... 2 drams  
Alcohol ..... 4 ounces  
Syrup ..... 1 gallon

Mix the oil and alcohol and gradually add  
the syrup. This is a good syrup to mix with  
cream, otherwise, one or 2 ounces of solu-  
tion of citric acid should be added.

**Licorice Syrup.**

Licorice root, cut..... 1 pound  
Boiling water..... 4 pints  
Sugar ..... 6 pounds

Pour the boiling water on the licorice and  
allow to stand 2 hours. Strain, pouring  
enough water through the strainer to make  
4 pints. Dissolve the sugar in it.

**Lime Fruit Syrup.**

Use the same formulas as for lemon syrup,  
taking limes in place of lemons.

**Lime Fruit Syrup.**

Citric acid..... 3 ounces  
Sugar ..... 7 pounds  
Boiling water..... 1 gallon  
Coloring, q. s.

Mix.

**Maple Syrup.**

Maple syrup (pure)..... 4 pints  
Water ..... 2 pints

Mix.

**Maple Syrup.**

Maple syrup..... 7 pints  
Solution of citric acid.... 1 ounce  
Vanilla extract..... 2 drams  
Water ..... 4 pints

Mix and dissolve.

**Maple Syrup.**

Maple sugar syrup..... 7 pints  
Sherry wine..... 1 pint  
Essence vanilla.....  $\frac{1}{2}$  ounce  
Solution of citric acid....  $\frac{1}{2}$  ounce

Mix.

**Marshmallow Syrup.**

Marshmallow, cut..... 8 ounces  
Water ..... 4 pints  
Sugar ..... 7 pounds

Macerate the marshmallow in the water for 2 hours, express, and add the sugar. Dissolve without heat.

**Milk or Cream Syrup.**

Syrup (any desired flavor) 1 ounce  
Milk ..... 6 ounces

Shake with shaved ice and fill the glass with carbonated water.

**Milk and Clam Juice.**

Clam juice.....  $1\frac{1}{2}$  ounces  
Milk ..... 2 ounces

Place in glass and fill with carbonated water. Add a pinch of salt and pepper. Stir well.

**Mineral Milk.**

Mix milk with equal parts of vichy, seltzer, or any other mineral water.

**Milk Sherbet.**

Strawberry syrup..... 1 ounce  
Pineapple syrup..... 1 ounce  
Vanilla syrup..... 1 ounce  
Milk, enough to fill the glass.

Mix well. Serve with straw.

**Milk and Egg Syrup.**

1 egg,  
Lemon syrup..... 1 or 2 ounces  
Milk, enough to fill the glass.

Shake with ice and strain.

**Milk and Egg Fruit Syrup.**

Any fruit syrup (or a combination of them) may be substituted for the lemon syrup, directed in the preceding formula.

**Milk Punch.**

1 egg,  
Orange syrup..... 2 ounces  
Solution of citric acid, a dash.  
Milk ..... 6 ounces

Shake with shaved ice and fill the glass with carbonated water.

**Milk Punch.**

1 egg,  
Catawba wine (or sherry) 4 ounces  
Syrup ..... 1 ounce  
Milk ..... 4 ounces  
Shake with shaved ice and fill the glass with carbonated water.

**Malted Milk Syrup.**

Malted milk, 1 teaspoon to 1 tablespoonful  
Syrup (any kind desired) ..... 1 or 2 ounces  
Milk ..... 2 ounces

Shake with ice, and fill with milk or soda water, as desired.

**Malted Milk and Egg.**

Made as in the preceding formula, adding one egg before shaking.

**Mint Syrup.**

Essence of peppermint.... 2 ounces  
Essence of vanilla..... 1 ounce  
Solution of citric acid.... 1 ounce  
Syrup, enough to make... 1 gallon

Mix. Color green.

**Mint Syrup.**

Peppermint water..... 4 pints  
Sugar ..... 7 pounds  
Green coloring, enough.

Mix and dissolve without heat.

**Nectar Syrup.**

Vanilla syrup..... 5 pints  
Pineapple syrup..... 1 pint  
Strawberry (or raspberry) syrup ..... 2 pints

Mix.

**Nectar Syrup.**

Vanilla syrup..... 3 pints  
Lemon syrup,  
Strawberry syrup, of each. 1 pint

Mix.

**Nectar Syrup.**

There are many other combinations of different syrups known by this name, but in all of them, vanilla syrup furnishes the predominating flavor.

**Nut Syrup.**

Pound the kernels of walnuts and hickory nuts, blanched, in a mortar with a little water until emulsified. Then strain and to each pint of emulsion, add 2 pints of cream syrup. Essence of vanilla or fruit essences may be added to suit.

**Nut Fruit Syrup.**

Roasted almonds..... 1 pound  
Cherries ..... 8 ounces

Grind and chop fine, add 1 pint of syrup, boil, strain, and add enough syrup to make 1 gallon. Flavoring extracts may be added.

**Orange Syrup.**

Extract of orange..... 4 fl. drams  
Solution of citric acid (50 per cent)..... 2 fl. drams  
Tincture of quillaja..... 3 fl. drams  
Raspberry syrup (prepared for fountain)..... 4 fl. ounces  
Simple syrup..... 1 quart

Mix.

**Orange Syrup.**

Sweet orange peel, in moderately fine powder.. 16 ounces  
Glycerin ..... 3 ounces  
Alcohol, sufficient quantity.  
Water, sufficient quantity.

Having mixed 14 fluid ounces alcohol with 2 fluid ounces glycerin, the peel is moistened in a porcelain mortar with 12 fluid ounces of this mixture. After standing 12 hours, percolation is proceeded with in the usual manner. The percolation is finished with a mixture of 2 parts alcohol and 1 part water. Reserving the first 14 ounces, add 1 fluid ounce of glycerin to the remainder, evaporate to  $2\frac{1}{2}$  fluid ounces, which mix with the reserve portion.

Having extracted the peel, express the juice of the peeled oranges, place in an enameled

pot and bring to a boil. Strain and add sugar in the proportion of 2 pounds of sugar to one pint of juice, thereby producing a "concentrated syrup." This syrup is diluted with plain syrup, and sufficient extract of the peel added to give it the necessary flavor.

#### Blood Orange Syrup.

Juice of fresh oranges....	2 pints
Water .....	2 pints
Sugar .....	6 pounds
Cherry juice (to color, about) .....	½ pint
Solution of citric acid (1 part in 2).....	1 fl. ounce

Mix.

#### Orange (or Other) Phosphates.

Into a mineral water (7 or 8 ounces) glass draw 1 to 1½ ounces of the specified fruit syrup, add 1 dram of dilute phosphoric acid or solution of acid phosphate; in another glass draw plain carbonated water, which pour into the first tumbler or glass, thereby avoiding foam. This is preferable to making a long line of varying fruit phosphate syrups.

#### Phosphate Blood Orange.

Blood orange fruit juice (of any good brand)....	1 bottle
Solution of citric acid (1 to 16).....	1 ounce
Extract of vanilla .....	2 ounces
Extract of lemon .....	½ ounce
Foam .....	1 ounce
Syrup, enough to make... 1 gallon	
Red coloring, sufficient to tint.	

Mix.

#### Orange Syrup.

Grate the peel of oranges and mix with twice its weight of sugar. Express the oranges and add the juice to the mixture. Let stand for an hour, stirring often. Add an equal quantity of water, and finally 1½ pounds of sugar to each pint of the mixture. Dissolve by stirring, and strain.

#### Orange Syrup.

Fresh oil of orange.....	½ ounce
Alcohol .....	4 ounces
Solution of citric acid....	1 ounce
Syrup .....	1 gallon

Mix. Color as desired.

#### Orange Syrup.

Orange syrup may also be prepared by the process directed under "Cinnamon Syrup."

#### Orange Flower Syrup.

Orange flower water.....	4 pints
Sugar .....	7 pounds
Solution of citric acid....	½ ounce

Mix and dissolve without heat.

#### Orgeat Syrup.

Cream syrup.....	8 fl. ounces
Vanilla syrup.....	8 fl. ounces
Essence of bitter almond.	1 fl. dram

Mix.

#### Orgeat Syrup.

Cream syrup.....	4 pints
Almond syrup.....	2 pints
Vanilla syrup.....	2 pints

Mix.

#### Malto Syrup.

Simple syrup.....	20 fl. ounces
Solution of acid phosphates (N. F.).....	2 fl. ounces
Essence of sarsaparilla....	4 drops

Mix.

The essence of sarsaparilla is made as follows

Oil of sassafras.....	30 minims
Oil of wintergreen.....	30 minims
Alcohol .....	6 fl. drams

#### Nerve Food Syrup.

Oil of sassafras.....	15 minims
Oil of wintergreen.....	15 minims
Alcohol .....	1 fl. ounce
Fluidextract of gentian....	1 fl. ounce
Syrup of sarsaparilla compound, U. S. P.....	8 fl. ounces
Caramel .....	1 ounce
Syrup, enough to make...	5 pints

Dissolve the oils in the alcohol and add to the other ingredients, previously well mixed. Serve in mineral glasses, first drawing the glass two-thirds full of carbonated water, then add ¾ to 1 ounce syrup and finally enough carbonated water to fill the glass without undue foaming. This is similar in taste and appearance to "Moxie."

#### Peach Syrup.

The pulp of ripe peaches is thoroughly disintegrated by a beater, adding gradually an equal weight of water, and passing the mixture through a moderately coarse strainer; to each quart of the strained liquid, add 3 pounds of sugar and dissolve.

#### Pear Syrup.

Make in the same way as directed for "Pineapple Syrup."

#### Pineapple Syrup.

Take a convenient number of pineapples, pare carefully and transfer them to a porcelain mortar, and thoroughly mash with a small quantity of sugar. Collect the juice, and for each quart take 1½ pints of water and 6 pounds of sugar. Make a syrup of the sugar and water by boiling, add to it the juice and sufficient foam producer.

#### Pineapple Syrup.

Essence of pineapple.....	2 fl. ounces
Solution of citric acid (50 per cent).....	1½ fl. ounces
Simple syrup.....	1 gallon

Mix.

#### Fruit Mead Syrup, Pineapple.

Water .....	5 pints
Simple syrup.....	3 pints
Pineapple juice.....	1 pint
French rose water.....	1 pint
Mead extract.....	4 fl. ounces
Fruit acid solution.....	¼ ounce

Mix.

#### Pistachio Syrup.

Extract of pistachio.....	1 ounce
Essence of bitter almond..	½ ounce
Syrup .....	1 gallon

Mix.

#### Polar Syrup.

Extract of root beer.....	4 ounces
Extract of ginger ale.....	2 ounces
Syrup .....	1 gallon
Foam .....	1 ounce

Mix.

#### Prune Syrup.

Boil 1 pound of prunes with 2 pints of water. Drain, beat the pulp and add more boiling water, until 4 pints of liquid are obtained. In this dissolve 7 pounds of sugar.

#### Raspberry and Strawberry Syrup.

Fruit, three quarts, are pulped with an equal weight of sugar, and the mixture heated by water bath in fruit jars and sealed. When wanted for use, a jar is opened and the contents mixed thoroughly with enough thin sim-



ple syrup to make 1 gallon and strain. When fruit juices or fresh fruit cannot be had and a fine quality of canned fruit is obtainable, the contents of a can can be pulped, heated gently and strained; if necessary, the canned fruit so pulped may have more sugar added, thereby producing a denser syrup and improving its keeping qualities. When wanted for use, dilute with water or thin syrup.

#### Raspberry Syrup.

Raspberry juice..... 32 fl. ounces  
Granulated sugar..... 3½ pounds

Dissolve the sugar in the juice with the aid of heat; strain and transfer to a bottle labeled "Concentrated Syrup." To prepare for fountain use, add to one quart of above syrup 2 quarts of simple syrup and 3 fluid drams of good strawberry red color.

Pineapple syrup may be made in the same way by substituting pineapple juice for raspberry and omitting the coloring.

#### Raspberry Syrup.

Beat the raspberries to a pulp, add half its weight of water, express. To each pint of liquid add 1¼ pounds of sugar, dissolve without heat.

#### Raspberry Syrup.

Raspberries ..... 5 quarts  
Sugar ..... 12 pounds  
Water ..... 1 pint

Sprinkle some of the sugar over the fruit in layers, allow to stand for a few hours, express and strain, washing the pulp with the water. Add the remainder of the sugar and water, bring to a boil and put in sterilized bottles, well sealed.

#### Root Beer Syrup.

Root beer extract..... 1 to 2 fl. ounces  
Simple syrup, thin..... 4 pints  
Caramel coloring, to suit.

In the same way may be prepared mead, Ottawa beer, birch beer and similar syrups.

#### Rose Syrup.

Rose water..... 4 pints  
Sugar ..... 7 pounds  
Red coloring, as desired.

Mix and dissolve without heat.

#### Sangaree Syrup.

Claret ..... 1 pint  
Port wine..... 2 pints  
Solution of citric acid.... 1 ounce  
Syrup, enough to make... 1 gallon

Mix.

#### Sarsaparilla Syrup.

Essence of sarsaparilla.... 2 fl. drams  
Compound fluidextract of sarsaparilla ..... 2 fl. ounces  
Caramel solution..... 3 fl. drams  
Simple syrup..... 32 fl. ounces  
Tincture of quillaja..... 2 fl. drams

Mix.

#### Sarsaparilla Syrup.

Simple syrup, thin..... 2 pints  
Caramel, to color..... ½ to 1 fl. ounce  
Sarsaparilla flavoring..... 1 fl. dram

The sarsaparilla flavoring used in the above is made as follows:

Oil of wintergreen ..... 6 fl. drams  
Oil of sassafras ..... 2 fl. drams  
Oil of cassia ..... 1½ fl. drams  
Oil of cloves ..... 1½ fl. drams  
Oil of anise ..... 1½ fl. drams  
Alcohol, enough to make.. 8 fl. ounces

Mix.

#### Sarsaparilla Syrup.

Compound syrup of sarsaparilla (U. S. P.)..... 4 fl. ounces  
Simple syrup, thin..... 4 pints  
Caramel ..... 1 fl. ounce  
Essence of wintergreen ... 1 fl. dram  
Essence of sassafras ..... 1 fl. dram

Mix.

#### Sarsaparilla Syrup.

Syrup of sarsaparilla.... 4 fl. ounces  
Oil of anise ..... 8 drops  
Oil of sassafras ..... 8 drops  
Oil of gaultheria ..... 12 drops  
Syrup ..... 4 pints  
Caramel, quantity sufficient.

Mix.

#### Sarsaparilla Syrup.

Essence of sassafras ..... 4 ounces  
Essence of wintergreen ... 4 ounces  
Essence of anise ..... 2 ounces  
Fluidextract of sarsaparilla compound ..... 4 ounces  
Syrup ..... 32 ounces  
Caramel, to color.

Mix.

#### Sarsaparilla Flavoring.

Oil of wintergreen ..... 1 ounce  
Oil of sassafras ..... ½ ounce  
Oil of cassia ..... 1 dram  
Oil of cloves ..... 1 dram  
Oil of lemon ..... ½ ounce  
Oil of anise ..... 3 drams  
Alcohol, enough to make.. 1 pint

Mix. The oils of cassia, cloves and lemon may be omitted.

#### Sarsaparilla Syrup.

Sarsaparilla flavoring (preceding formula)..... 2 to 4 ounces  
Caramel solution..... 2 ounces  
Syrup, enough to make... 1 gallon

Mix.

#### Sherbet Syrup.

Orange syrup,  
Pineapple syrup,  
Vanilla syrup, of each, equal parts.

Mix.

#### Sherbet Syrup.

Sherry wine..... 1 gallon  
Solution of citric acid.... 1 ounce  
Syrup ..... 10 pints  
Water ..... 8½ gallons

Mix.

#### Phosphated Sherbet.

California orange wine... 1 bottle  
Wild cherry syrup..... 2 pints  
Solution of citric acid.... 1 ounce  
Simple syrup..... 4 pints  
Solution gelatin..... 1 ounce

Mix.

#### Sherbet Syrup.

Essence of lemon ..... ½ ounce  
Essence of orange ..... ½ ounce  
Pineapple juice..... 8 ounces  
Solution of citric acid.... 2 ounces  
Syrup, enough to make... 1 gallon  
Color with cochineal.

Mix.

#### Sherbet Syrup.

Vanilla syrup..... 3 pints  
Pineapple syrup..... 2 pints  
Lemon syrup..... 1 pint  
White wine..... 2 pints

Mix.

#### Strawberry Syrup.

Place 6½ pounds of ripe strawberries and 7½ pounds of powdered sugar in a broad-mouthed vessel. Thoroughly mash and mix

together, close the jar tightly, put it away in a cool place for three days, frequently shaking it during this time, and finally strain off the syrup, using a large funnel in which a piece of clean flannel is placed. It requires about 36 hours for a syrup from 6 pounds of berries to pass through the filter in this way, and the operation should be done in a cool place. The syrup thus obtained is of splendid odor and flavor, though it will not keep very long.

#### Strawberry Syrup.

Take fresh strawberries, 5 quarts; white sugar, 12 pounds; water, 1 pint. Sprinkle some of the sugar over the fruit in layers, and allow the whole to stand for several hours; express the juice and strain, washing out the pulp with water; add the remainder of sugar and water, bring to fluid to the point of boiling, and then strain. This will keep a long time.

#### Strawberry Syrup Without the Fruit.

Add to 1 gallon of simple syrup 2 teaspoonfuls extract of strawberry and  $\frac{1}{4}$  ounce tartaric acid. Color with cochineal solution. Strain.

#### Strawberry Syrup.

Strawberry juice..... 1 pint  
Solution of citric acid..... 1 ounce  
Cochineal coloring.....  $\frac{1}{2}$  ounce  
Syrup, enough to make.... 1 gallon

Mix.

#### Tea Syrup.

Black tea.....  $\frac{1}{2}$  pound  
Green tea.....  $\frac{1}{2}$  pound  
Boiling water, enough.  
Sugar ..... 7 pounds

Pour sufficient boiling water over the tea, when cold decant, again add boiling water until 4 pints of infusion are obtained. In this dissolve the sugar without heat.

#### Tea Syrup.

English breakfast tea.....  $\frac{1}{2}$  pound  
Boiling water, enough.  
Sugar ..... 4 pounds

Prepare as directed in the preceding formula.

#### Vanilla Syrup.

Simple syrup, thin..... 4 pints  
Extract of vanilla..... 1 to 2 fl. ounces

Mix.

#### Vanilla Syrup.

Extract of vanilla..... 2 to 4 ounces  
Solution of citric acid.....  $\frac{1}{2}$  ounce  
Syrup ..... 1 gallon

Mix.

#### Syrup of Violets.

Add a little strong tincture of orris root to water, render clear, or nearly so, by filtration through magnesium carbonate, and dissolve in the flavored water enough sugar to make a syrup. Tincture of grass may be used as a coloring if a green tint is desired.

#### Violet Syrup.

Freshly picked violets,  
Water,  
Sugar, of each, a sufficiency.

Bruise the violets in a mortar and add 3 times their bulk of water. Strain and dissolve  $1\frac{1}{2}$  pounds of sugar in each pint of juice without heat.

#### Syrup Wild Cherry.

Elixir of wild cherry..... 20 ounces  
Syrup ..... 1 gallon  
Solution of gelatin..... 1 ounce

Mix.

The elixir of wild cherry, for the above, is made as follows:

Fluidextract of wild cherry 1 pint  
Simple elixir (U. S. P.).. 1 gallon

Mix.

#### Syrup Wild Cherry Phosphate.

Wild cherry syrup..... 6 pints  
Grape syrup..... 1 pint  
Sherry wine..... 1 pint  
Solution of acid phosphates 8 fl. ounces

Mix them.

#### Syrup Wild Cherry.

Syrup of wild cherry (U. S. P.)..... 6 pints  
Syrup ..... 1 pint  
Water ..... 1 pint

Mix.

A trace of solution of phosphates may be added.

#### Beef, Iron and Wine for Soda Fountains.

Beef, iron and wine, 1 ounce; vanilla syrup, 3 ounces.

Mix.

#### Raspberry or Strawberry Pulp.

Take a quantity of thoroughly ripe fruit; rub or press the fruit to a pulp through a hair sieve into an earthen or stoneware pan; add a quarter of a pound of sugar for each pound of pulp; mix thoroughly, fill the bottles to the neck; cork and tie down; place them in a boiler of cold water, and put over the fire and boil gently for 20 minutes; when cold, seal and store away.

#### Peach Pulp.

Select ripe, freestone peaches; slice them up, skin and all, into a preserving pan; add a little water; place on the fire, and stir constantly until it is reduced to a pulp; rub and press this through a coarse hair sieve into an earthen or stoneware pan, and add a quarter of a pound of sugar for each pound of pulp. Complete as in the foregoing.

#### Pineapple Pulp.

Peel and grate the pineapples to a pulp; to each pound add 4 ounces of sugar; mix until the sugar is thoroughly dissolved; fill the bottles, cork and tie down; finish as above.

#### Ice Cream Soda Water.

Put a spoonful of ice cream in a glass, add the syrup desired and fill with carbonated water. Serve with a spoon.

#### Ice Cream and Egg Syrup.

Put the ice cream and the egg in a shaker, add a little shaved ice and the syrup desired. Shake all together, transfer to a glass, add carbonated water and strain.

#### Sundaes.

Put a ladle of ice cream in a sundae glass and pour over it the desired syrup or fruit pulp.

Fruit pulps are generally preferred.

#### Extract of Cascara Sagrada for Fountain.

Oil of cinnamon, true..... 1 dram  
Oil of cloves ..... 2 drams  
Oil of nutmeg..... 80 drops  
Tincture of tolu ..... 12 drams  
Tincture of ginger ..... 12 ounces

Fluidextract of cascara, tasteless ..... 16 ounces  
Magnesium carbonate..... 2 ounces  
Water, enough to make.... 4 pints

Triturate the oils, tinctures and fluidextract with the magnesium carbonate, gradually add

water, and pass water through the filter to make 4 pints.

To make the syrup for the fountain, take

Extract of cascara (as above) .....	6 ounces
Flavoring extract of orange .....	2 ounces
Syrup .....	1 gallon
Solution of gelatin or soap bark .....	1 ounce

Color with caramel if necessary.

Mix.

#### Mixed Sundaes.

In place of the syrup or pulp a mixture of two or more is often called for. Nuts and chocolate, or cherries and pineapple are favorites.

#### Mead Syrup.

Water .....	10 gallons
Strained honey.....	2 gallons
Ginger .....	3 ounces
Sliced lemons.....	2

Mix and boil for half an hour, skimming all the time. Add 2 ounces of hops. When nearly cold put into a cask. Use after 3 weeks.

#### Mead Syrup.

Mead extract.....	8 ounces
Angostura bitters.....	12 ounces
Syrup (any flavor desired).....	1½ gallons
Honey .....	½ gallon
Solution of citric acid.....	2 ounces

Mix.

#### Mead Syrup.

Cherry juice.....	1 pint
Rose syrup.....	4 ounces
Mead extract.....	4 ounces
Syrup (any flavor).....	6 pints
Solution of citric acid.....	2 ounces

Mix.

#### Raspberry Mead.

Water .....	5 pints
Syrup .....	3 pints
Raspberry juice.....	1 pint
Rose water.....	1 pint
Mead extract.....	4 fl. ounces
Fruit acid solution.....	¼ ounce

The "mead extract" is prepared as follows:

Sarsaparilla .....	20 ounces
Sassafras .....	6 ounces
Jamaica ginger.....	2 ounces
Cloves .....	2 ounces
Allspice .....	2 ounces
Bourbon vanilla.....	4 ounces
Oil of lemon .....	1 fl. dram
Oil of wintergreen .....	½ fl. dram
Oil of sassafras .....	¼ fl. dram
Deodorized alcohol.....	½ gallon
French sugar coloring.....	½ pint
Water, enough to make....	1 gallon

Grind all the drugs in an ordinary hand mill to a coarse powder, using for a menstruum a mixture of the alcohol directed above with ½ gallon of distilled water. Moisten the powder with a pint of the menstruum and pack in a water bath percolator; pour upon it 1 pint more of the menstruum and macerate four days, then heat moderately for two hours and begin to percolate, adding the remainder of the menstruum and continue percolation until the drugs are exhausted; then withdraw the heat and add distilled water until 1 gallon of the fluid is obtained. Dissolve the oils in one ounce of alcohol and add to the percolate; then add the French sugar coloring, agitate well, and set aside for forty-eight hours, shaking several times a day; then filter.

The fruit acid solution is made as follows:

Citric acid.....	5 pounds
Boiling water.....	1 gallon

Two fluid ounces of this solution are equivalent to 1 ounce of acid. For dispensing, draw the glass from 1-3 to ½ full of the mead syrup and fill it up with carbonated water from the fountain. Various flavors may be given the mead syrup by substituting almost any of the common fruit juices for that of the pineapple or raspberry in the formulas given above.

#### Hot Beef Bouillon.

Beef bouillon.....	1 cupful
Sweet cream.....	1 ounce

Mix.

#### Hot Beef and Celery.

Fluidextract of beef.....	8 ounces
Hot water.....	1 pint
Extract of celery.....	1 dram
Caramel .....	1 dram

Mix the beef in hot water, add celery and color, use a shaker top in the bottle, as there is a sediment in the beef extract which necessitates shaking. In a six or seven ounce cup shake about 2 teaspoonfuls of the beef extract prepared as above, draw on this sufficient hot water, add salt to suit taste, stir with a spoon, shake a little white pepper on top.

#### Hot Chicken Cream.

Two ounces concentrated chicken and ½ ounce sweet cream. Stir while adding hot water and add spice.

#### Hot Chocolate.

Mix together 5 ounces of sugar, 8 ounces of chocolate, and 1½ pints of water, and boil in a water bath for half an hour, then add enough water to make the mixture measure 1½ pints. Three or four tablespoonfuls of this preparation to one tablespoonful of prepared milk are placed in a soda cup with two tablespoonfuls of whipped cream. The soda is then drawn into the cup and the whole is stirred from the bottom only.

#### Hot Chocolate.

Powdered chocolate.....	4 ounces
Powdered sugar.....	16 ounces

Mix thoroughly and transfer to wide-mouthed bottle or can. Add two teaspoonfuls of the mixed powder to each cup; add the hot water slowly, and with constant stirring.

#### Hot Chocolate.

Powdered chocolate.....	8 ounces
Condensed milk.....	16 ounces
Granulated sugar.....	1 pound
Extract of vanilla.....	1½ fl. ounces
Whites of eggs.....	2

Rub the chocolate up with sufficient hot water to form a smooth paste and add to remainder of water, in which have been dissolved the other ingredients. Pour about 1 fluid ounce of this syrup in a hot soda water mug and fill the latter to the brim with hot water. Serve with a spoon.

#### Clam Bouillon.

Clam water.....	1 ounce
Hot water,	
Milk, of each, enough.	
Salt and pepper to suit taste.	

#### Clam Juice.

Concentrated clam juice.....	1½ ounces
Hot milk.....	2 ounces
Hot water.....	4 ounces

One pinch of salt and a little pepper for each cup. Always use white pepper.



**Clam Bouillon.**

Clam bouillon..... 1 ounce  
 Tomato catsup..... ½ ounce  
 Mix and fill the cup with hot water.

**Clam Bouillon.**

Clam juice..... ¼ ounce  
 Beef extract..... ¼ ounce  
 Essence of celery, a dash.  
 Mix in a cup and fill with hot water.

**Clam Bouillon.**

Clam juice..... 2 ounces  
 Lemon juice..... ½ teaspoonful  
 Pepper and salt.  
 Mix in a cup and fill with hot water.

**Hot Coffee Soda.**

Use the same formulas as for making cold coffee syrup. Put a sufficient quantity of the syrup in the cup and fill with boiling water instead of soda water.

**Ox Celery.**

Maranta ..... 2 av. ounces  
 Extract of beef..... 16 av. ounces  
 Salt ..... 4 av. ounces  
 Extract of celery ..... 2 av. ounces  
 Extract of savory ..... 1½ ounces  
 Hot water..... 1 gallon

Mix. Tincture of capsicum may be added if desired, or a few drops put in the mug when drawn.

**Hot Lemonade.**

Juice of one lemon,  
 Powdered sugar, 1 to 3 teaspoonfuls,  
 Hot water, enough to fill the cup.  
 Twist a small portion of the lemon peel over the cup.

**Hot Malted Milk.**

Malted milk..... 1 tablespoonful  
 Hot water..... 4 ounces  
 Hot milk, enough to fill the mug.  
 Mix.

**Mock Turtle Bouillon.**

Extract of beef..... 2 ounces  
 Potted chicken..... 2 ounces  
 Clam juice..... 8 ounces  
 Hot water..... 3 pints  
 Tincture of black pepper.. 1 ounce  
 Essence of celery ..... 3 drams  
 Essence of orange peel ... 2 drams

Mix and dissolve.

To dispense, take 2 ounces of the mock turtle extract and fill the mug with hot water; ½ ounce sweet cream may be added.

**Oyster Broth.**

Oyster juice..... 1 ounce  
 Cream ..... 1 ounce  
 Salt and pepper, of each, enough.  
 Place in mug and fill with hot water.

**General Flavoring Extract.**

Oil of bitter almond(freed  
 from hydrocyanic acid).. 8 drops  
 Essence of lemon..... 12 drops  
 Oil of cinnamon ..... 8 drops  
 Oil of nutmeg ..... 4 drops  
 Highly rectified spirit.... 1 ounce

Mix. A few drops to be added to puddings, custards, etc.

**FLAVORING EXTRACTS.****General Flavoring Extract.**

Oil of bitter almond ..... 10 drops  
 Oil of lemon ..... 12 drops  
 Oil of orange ..... 8 drops  
 Oil of cinnamon ..... 6 drops  
 Oil of nutmeg ..... 3 drops  
 Essence of vanilla..... 1 dram  
 Alcohol, deodorized, enough  
 to make..... 1 ounce

Mix. Use ½ teaspoonful for puddings, etc.

**Allspice Extract.**

Oil of pimenta or allspice 1 fl. ounce  
 Alcohol, enough to make.. 1 pint  
 Mix. Agitate until perfectly united, and the next day decant the clear portion, if there is any sediment. Used by cooks and confectioners as flavoring.

**Allspice Extract.**

Allspice, freshly ground... 4 ounces  
 Diluted alcohol..... 1 pint  
 Mix, macerate for a week, and filter.

**Almond Flavor for Ice Creams, Etc.**

Almonds ..... 2 ounces  
 Sugar ..... 1 pound  
 Water ..... 1½ pounds  
 Juice of 2 lemons.

Blanch the almonds and run through cold water; pound and keep them moist with water, so the oil will not separate. Put this paste into the syrup of the sugar and water, and squeeze in the juice of 2 lemons. Strain.

**Almond Extract.**

Oil of bitter almond (free  
 from hydrocyanic acid).. 1 ounce  
 Alcohol, enough to make.. 1 pint  
 Mix.

**Almond Extract.**

Oil of bitter almond..... 1 ounce  
 Alcohol ..... 12 ounces  
 Water ..... 4 ounces  
 Tincture of turmeric..... 1 dram  
 Mix and filter through powdered talc.

**Angelica Extract.**

Angelica root, ground..... 2 ounces  
 Diluted alcohol..... 1 pint  
 Mix, macerate for 1 week and filter.

**Anise Extract.**

Anise seed, powdered..... 4 ounces  
 Alcohol ..... 1 pint  
 Mix, macerate one week and filter.

**Anise Extract.**

Anise seed, powdered..... 2 ounces  
 Star anise, powdered..... 2 ounces  
 Alcohol ..... 1 pint  
 Mix, macerate for one week and filter.

**Anise Extract.**

Oil of anise seed..... ½ ounce  
 Oil of star anise ..... ½ ounce  
 Alcohol ..... 15 ounces  
 Mix.

**Apple Extract.**

Glycerin ..... 1 ounce  
 Amyl valerianate..... ½ ounce  
 Linalyl formate..... ½ dram  
 Fluidextract of orris..... 1 ounce  
 Alcohol ..... 11 ounces  
 Water ..... 5 ounces

Mix and filter through powdered talc.

#### Apricot Extract.

Amyl valerianate.....	¼ ounce
Linalyl formate.....	1 dram
Glycerin .....	1 ounce
Fluidextract of orris.....	2 ounces
Alcohol, enough to make..	1 pint

Mix and filter.

#### Apricot Extract.

Beat apricots to a pulp and add an equal volume of alcohol. Macerate for 3 days, strain and filter.

#### Banana Extract.

Banana fruit (peeled)....	1 pound
Alcohol .....	1 pint
Water .....	1 pint

Mix. Macerate for 14 days; express and strain.

#### Banana Extract (So-called).

Flavoring extract of pine-apple .....	½ fl. ounce
Flavoring extract of vanilla .....	½ fl. ounce
Flavoring extract of strawberry (uncolored).....	15 fl. ounces

Mix, and, if necessary, filter through a little magnesium carbonate and color with a mixture of cochineal color and tincture of curcuma.

#### Banana Extract.

Amyl acetate.....	1 ounce
Ethyl valerianate.....	1 dram
Alcohol .....	15 ounces

Mix.

#### Banana Extract.

Amyl acetate.....	4 drams
Butyric ether.....	1 dram
Alcohol .....	10 ounces
Water, enough to make..	1 pint

Mix and filter.

#### Beef Tea Extract.

Extract of beef.....	5 ounces
Hot water.....	1 pint
Tincture of black pepper..	1 ounce

Mix the extract of beef in hot water, then add the tincture; use of this 2 drams or 2 teaspoonfuls to each cup, and fill with hot water. Salt to suit the taste. The tincture of black pepper is made as follows:

Whole black pepper, crushed	3 ounces
Alcohol .....	1 pint

Steep and filter. The object of this method is to keep the tea clear of sediment.

#### Bergamot Extract.

Oil of bergamot.....	3 drams
Pineapple ether.....	2 ounces
Alcohol, enough to make..	1 pint

Mix.

#### Birch Extract.

Oil of birch.....	1½ ounces
Alcohol .....	12 ounces
Water, enough to make..	1 pint

Mix and filter.

#### Birch Extract.

Sassafras .....	1½ ounces
Wild cherry bark.....	½ ounce
Pimenta .....	1½ ounces
Wintergreen leaves.....	1½ ounces
Coriander seed.....	1 ounce

Reduce the drugs to powder and percolate with diluted alcohol, until 1 pint is obtained. This is a good extract for birch beer and similar preparations.

#### Blackberry Extract.

Blackberries (fresh fruit).	32 ounces
Alcohol .....	10 ounces
Water .....	26 ounces

Mix. Macerate for 14 days; express and strain through muslin.

#### Blackberry Extract.

Apple oil.....	1 ounce
Quince oil.....	½ ounce
Tincture of orris.....	2 ounces
Solution of citric acid....	½ ounce
Alcohol, enough to make..	2 pints

Mix and filter. Color to suit.

#### Blackberry Extract.

Acetic ether.....	½ ounce
Butyric ether.....	1 ounce
Tincture of orris, enough to make.....	1 pint
Color, quantity sufficient	

Mix and filter.

#### Black Pepper Extract.

Recently powdered black pepper .....	2 ounces
Alcohol, Water,	

Of each a sufficient amount.

Pack the powder in a percolator prepared for percolation. Cover with a mixture of alcohol and water in equal volumes (using about 20 fluid ounces), and when the percolate appears close the exit of the percolator and macerate for a period of 24 hours. Then percolate slowly until 1 pint of percolate is obtained.

The strength may be increased or diminished to suit the taste of the operator, the quality desired governing in this direction. The diluted alcohol may also be replaced with alcohol to advantage, if the question of economy is not a factor.

#### Blueberry Extract.

Blueberries, freshly picked	1 pound
Alcohol .....	1 pint

Crush the berries to a pulp, add the alcohol and macerate for 3 days. Strain and filter.

#### Cacao Extract.

Deodorized alcohol.....	1 pint
Proof spirit.....	3 ounces
Powdered cacao .....	8 ounces
Powdered vanilla .....	½ ounce
Powdered cinnamon .....	½ ounce
Ambergris .....	20 grains

Mix, macerate for two weeks, express and filter.

#### Calamus Extract.

Deodorized alcohol.....	1 pint
Diluted alcohol, enough to make .....	2 pints
Oil of calamus.....	3 ounces
Magnesium carbonate.....	1 ounce

Mix the oil and spirit, rub up with the magnesia, filter and add enough diluted alcohol through the filter to obtain 2 pints.

#### Calamus Extract.

Calamus root, powdered..	4 ounces
Alcohol, enough to make..	1 pint

Mix, macerate for 3 days and filter.

#### Caraway Extract.

Oil of caraway.....	1½ ounces
Alcohol .....	10 ounces

Water, enough to make... 1 pint  
Mix, filter through powdered talc and color with tincture of grass.

**Caraway Extract.**

Caraway seed, freshly ground ..... 4 ounces  
 Alcohol, enough to make.. 1 pint  
 Mix, macerate for 8 days, filter and color.

**Cardamom Extract.**

Cardamom seeds, free of husks and freshly ground 1 ounce  
 Alcohol ..... 12 ounces  
 Water ..... 4 ounces  
 Mix, macerate 8 days and filter.

**Cascarilla Extract.**

Ground cascarilla bark.... 1 ounce  
 Diluted alcohol.....16.ounces  
 Mix, macerate 3 days and filter.

**Cassia Extract.**

Oil of cassia.....1½ ounces  
 Alcohol, enough to make.. 1 pint  
 Tincture of saunders, enough to color.  
 Mix.

**Cassia Extract.**

Cassia, powdered..... 4 ounces  
 Alcohol, enough to make.. 1 pint  
 Mix, macerate for 8 days and filter.

**Catechu Extract.**

Catechu, powdered.....1½ ounces  
 Glycerin ..... 2 ounces  
 Alcohol, enough to make.. 1 pint  
 Mix, macerate and filter.

**Cedrat Extract.**

Grate the rind of 6 fresh citrons and add alcohol, 1 pint. Macerate for 8 days, then filter.

**Celery Extract.**

Celery seed..... 2 ounces  
 Alcohol, a sufficient quantity.

Powder the celery seed in an iron mortar, moisten with alcohol and pack as usually directed in a percolator. Cover with alcohol (using about 20 fluid ounces), and when the percolate appears close the exit of the percolator and macerate for 24 hours. Then percolate slowly until 1 pint of percolate is obtained. The strength may be increased or diminished to suit the taste of the operator, the quality desired governing in this direction.

**Celery Extract.**

Celery seed, freshly ground ..... 4 ounces  
 Diluted alcohol, enough to make ..... 1 pint  
 Mix, macerate for 1 week and filter.

**Celery Extract.**

Oil of celery.....1½ ounces  
 Alcohol ..... 12 ounces  
 Water ..... 4 ounces  
 Mix and filter through powdered talc.

**Cherry Extract.**

Crush black cherries to a pulp, add an equal weight of alcohol, macerate for 8 days, then express and filter.

**Cherry Extract.**

Benzoic ether..... 2 drams  
 Acetic ether..... ½ ounce  
 Oil of peach kernels..... 1 dram  
 Benzoic acid..... 1 dram  
 Alcohol, enough to make.. 1 pint  
 Mix and filter.

**Cinnamon Extract.**

Bruised cinnamon..... 2 drams  
 Oil of cinnamon..... 1 dram  
 Alcohol ..... 3 ounces  
 Mix, digest and strain.

**Cinnamon Extract.**

Cinnamon (Ceylon), powdered ..... 4 ounces  
 Alcohol, enough to make.. 1 pint  
 Mix, macerate for 1 week and filter.

**Cinnamon Extract.**

Oil of cinnamon ..... 1 ounce  
 Oil of cassia ..... 2 drams  
 Alcohol, enough to make.. 1 pint  
 Color, as desired.  
 Mix and filter.

**Clove Extract.**

Oil of cloves..... 2 fl. drams  
 Freshly powdered cloves.. 2 ounces  
 Alcohol, a sufficient quantity.

Rub the oil with the powdered cloves and pack the mixture in a percolator prepared for percolation. Cover with alcohol (using about twenty fluid ounces), and when the percolate appears close the exit of the percolator and macerate for twenty-four hours. Then percolate slowly until one pint of percolate is obtained.

**Clove Extract.**

Cloves, powdered..... 4 ounces  
 Alcohol, enough to make.. 1 pint  
 Macerate 1 week and filter.

**Clove Extract.**

Oil of cloves.....1½ ounces  
 Alcohol ..... 12 ounces  
 Water ..... 4 ounces  
 Mix, filter through powdered talc.

**Coffee Extract.**

Coffee, freshly ground.... 1 pound  
 Water ..... 1 quart  
 Glycerin ..... 4 ounces

Heat the coffee and water to the boiling point, let stand 2 hours, decant and add the glycerin.

**Coffee Extract.**

Ground Java coffee..... 4 ounces  
 Ground Mocha coffee..... 4 ounces  
 Ground vanilla ..... 2 drams  
 Diluted alcohol, enough to make ..... 2 pints

Mix, and percolate with diluted alcohol until 2 pints are obtained.

**Coffee Extract.**

Ground coffee.....4 to 8 ounces  
 Cinnamon ..... 60 grains  
 Vanilla ..... 60 grains  
 Diluted alcohol, enough to make ..... 2 pints

Mix and percolate as directed in the preceding formula.

**Coriander Extract.**

Deodorized alcohol..... 12 ounces  
 Water ..... 4 ounces  
 Oil of coriander..... 1 ounce  
 Color lightly with caramel.

Mix and filter through powdered talc.

**Coriander Extract.**

Coriander, freshly powdered ..... 4 ounces  
 Alcohol, enough to make.. 1 pint  
 Mix, macerate for one week and filter.



**Cranberry Extract.**

Crush 1 pound of cranberries to a pulp, add 1 pint of alcohol, allow to stand 3 days, express and filter.

**Cumin Extract.**

Cumin seed..... 4 ounces  
Alcohol ..... 12 ounces  
Water ..... 6 ounces

Mix, macerate for 8 days and filter.

**Currant Extract.**

Crush 1 pound each of red and black currants to a pulp, add 2 pints of alcohol. Macerate for a week and filter.

**Curry Extract.**

Oil of black pepper..... 2 drams  
Oil of coriander ..... 2 drams  
Oil of caraway ..... 1 dram  
Oil of cloves ..... 1 dram  
Oil of cardamom ..... 30 drops  
Extract of ginger ..... 6 ounces  
Extract of capsicum ..... 4 ounces  
Tincture of turmeric..... 6 ounces

Mix and filter.

**Curry Extract.**

Curry powder..... 4 ounces  
Diluted alcohol..... 16 ounces  
Mix. Macerate three days and filter.

**Fennel Extract.**

Fennel seed, freshly powdered ..... 4 ounces  
Alcohol, enough to make.. 1 pint  
Mix and filter.

**Fennel Extract.**

Oil of fennel.....1½ ounces  
Alcohol ..... 12 ounces  
Water ..... 4 ounces  
Mix and filter through powdered talc.

**Fruit Flavors (French Fruit Juices).**

Make a pulp of select fruit and squeeze out through a fine sieve into a bottle, filling it to the shoulder; cork tight, and fasten the cork with wire. Put in a vessel of boiling water and boil for half an hour. Let the cooling take place in the water, and then drive the cork in and wax. Keep cool in the dark. When opened, use instantly.

**Jamaica Ginger Extract.**

Jamaica ginger (ground)... 2 pounds  
Pumice stone (powdered)... 2 ounces  
Lime (slaked)..... 2 ounces  
Dilute alcohol, sufficient to make..... 4 pints

Rub the ginger with the pumice stone and lime, thoroughly mixed; then moisten with dilute alcohol until perfectly saturated; place the mixture in a narrow percolator, being careful not to use any force in packing; simply place it so that the menstruum will go through uniformly; lastly, add dilute alcohol and proceed until four pints of the percolate are obtained; allow the liquid to stand for 24 hours and filter if necessary.

**Ginger Extract.**

Fluidextract of ginger... 2 ounces  
Alcohol, enough to make.. 16 ounces  
Mix.

**Ginger Extract.**

Jamaica ginger, powdered. 3 ounces  
Lemon peel, freshly grated 2 ounces  
French brandy..... 2 pints  
Mix, macerate for a week and filter.

**Ginger Extract, Soluble.**

Fluidextract of ginger (U. S. P.)..... 4 fl. ounces  
Magnesium carbonate, .  
Water,  
Alcohol, of each, a sufficient amount.

Evaporate the fluidextract to 1 fluid ounce, add enough magnesium carbonate to form a creamy mixture, then enough water to bring to the measure of 8 fluid ounces, rubbing well together, and filter. To the filtrate add enough alcohol to make a total of 16 fluid ounces. Color, if desirable, with caramel.

See also formula in National Formulary.

**Ginger Extract.**

Soluble essence of ginger. 18 ounces  
Essence of vanilla..... 1 dram  
Tincture of fresh lemon peel ..... 1 ounce  
Tincture of capsicum..... 4 drams  
Burnt sugar..... 3 drams

Mix, and allow to stand till clear.

**Ginger Ale Extract.**

To be dispensed from the soda fountain it is necessary to produce, first, a ginger extract which shall be soluble and afford no precipitation upon admixture with carbonated water. Possibly the best method of preparing such an extract is the following, which produces an article as strong as possible, compatible with its solubility, possessing a fine aroma peculiar to Jamaica ginger and perfectly free from capsicum: Shake together ginger in coarse powder, 1½ pounds; and alcohol, 60 per cent, 2 pints and 5 ounces; water, 15 ounces; repeating the shaking frequently during ten days. Then percolate, press and filter, the product being about 45 ounces. Take 40 fluid ounces of this tincture, 40 ounces of water, and mix. Add to it ¾ of an ounce of sodium phosphate dissolved in 5 ounces of boiling water and allowed to cool. Shake well. Next add ¼ ounce of fine calcium chloride, dissolved in 5 ounces of nearly cold water. Shake well and allow to stand twelve hours and filter. The filtered solution is placed in a still and distilled at a very low temperature, reserving the first 30 ounces for further use. Distill a further quantity of 40 fluid ounces, and allow the still to cool. The residue in the still, which will be about 18 fluid ounces, is what is required, and is gotten out by rinsing the still with the 30 ounces first reserved.

**Ginger Ale Extract.**

Tincture of ginger ..... 1 quart  
Tincture of capsicum ..... 1½ ounces  
Extract of orange ..... 1 ounce  
Extract of lemon ..... 1 dram  
Caramel ..... 1½ ounces  
Water ..... 3 pints  
Sugar ..... ½ pound  
Magnesium carbonate..... 1 ounce  
Mix and let stand 12 hours, shaking often.  
Filter.

**Gooseberry Extract.**

Aldehyde ..... 1 dram  
Acetic ether..... 5 drams  
Benzoic ether..... 1 dram  
Oenanthic ether..... 1 dram  
Solution of citric acid..... 2 drams  
Benzoic acid..... 2 drams  
Alcohol, enough to make.. 1 pint  
Mix.

**Gooseberry Extract.**

Crush 1 pound of gooseberries to a pulp, add 1 pint of alcohol. Let stand for 3 days, then express and filter.

**Grape Extract.**

Crush 1 pound of grapes to a pulp, add 1

pint of alcohol. Let stand for 3 days, then express and filter.

#### Grape Extract.

Rhine wine..... 6 ounces  
Oenanthic ether.....1½ ounces  
Chloroform..... 2 drams  
Formic ether..... 2 drams  
Aldehyde..... 2 drams  
Alcohol, enough to make.. 1 pint

Mix.

#### Juniper Extract.

Oil of juniper berries.....1½ ounces  
Alcohol..... 12 ounces  
Water..... 4 ounces

Mix and filter through powdered talc.

#### Juniper Extract.

Crush 1 pound fresh juniper berries to a pulp, add 1 pint of alcohol, let stand for 3 days, then express and filter.

#### Kola Extract.

Powdered kola..... 1 ounce  
Orange peel..... 6 drams  
Vanilla..... ½ dram  
Cinnamon..... 1 dram  
Port wine..... 8 ounces  
Alcohol..... 10 ounces

Mix, macerate for a week and filter.

#### Lavender Extract.

Deodorized alcohol..... 12 ounces  
Water..... 4 ounces  
Oil of Mitcham lavender..1½ ounces

Color with red tincture.

Mix and filter through powdered talc.

#### Lavender Extract.

Lavender flowers..... 4 ounces  
Oil of lavender..... 1 dram  
Alcohol, enough to make.. 1 pint

Macerate for one week and filter.

#### Flavoring Extract Lemon.

Oil of lemon, fresh..... 8 ounces  
Grated peel of 6 lemons.  
Alcohol..... 1 gallon

Mix, macerate 14 days and filter.

#### Lemon Extract.

	1	2	3
Fresh oil of lemon.	3 ozs.	8 ozs.	8 ozs.
Freshly grated lemon peel	.....	2 ozs.	4 ozs.
Oil of lemongrass (fresh)	.....	—	60 drops
Alcohol	.....	2 pts.	8 pts.
Water (boiled)	.....	—	1 pint

Mix, let stand for 7 days, then filter.

#### Lemon Extract.

Grate off the outer rind of four lemons. Put this into a wide-mouthed bottle and pour upon it a pint of alcohol and add thereto one-half fluid ounce of fresh oil of lemon. Macerate, with occasional shaking, for four days and filter. Color the filtrate to suit with a sufficient amount of tincture of curcuma.

#### Extract Lemon, Soluble.

Oil of lemon (fresh).....1¼ ounces  
Magnesium carbonate.....1½ ounces  
Alcohol..... 12 ounces  
Water, enough to make... 32 ounces

Dissolve the oil in the alcohol and rub it with the magnesium carbonate in a mortar. Pour the mixture into a quart bottle, fill the bottle with water, and allow to macerate a

week or more, shaking every day. Then filter through paper to make the product measure 2 pints.

This extract is one-half the strength of concentrated extract of lemon, and makes a clear liquid with syrup and aqueous liquids.

#### Lemon Extract.

Citral..... 1 ounce  
Oil of lemon..... 15 ounces  
Alcohol..... 3 gallons  
Water..... 2 gallons

Mix and filter through powdered talc.

#### Lime Fruit Extract.

Deodorized alcohol..... 12 ounces  
Water..... 4 ounces  
Oil of lime fruit.....1½ ounces  
Pineapple ether..... ½ ounce  
Color lightly with tincture of curcuma.

Mix and filter through powdered talc.

#### Lime Extract.

Grate the rind of 1 dozen limes and add 1 pint of alcohol. Macerate for a week and filter.

#### Mace Extract.

Mace, moderately fine..... 6 ounces  
Alcohol..... 32 ounces

Mix. Macerate for 14 days; express and filter through paper.

#### Mace Extract.

Oil of mace.....1½ ounces  
Alcohol..... 12 ounces  
Water..... 4 ounces

Mix and filter through powdered talc.

#### Mead Extract.

Ground mace..... 8 ounces  
Ground cinnamon..... 8 ounces  
Ground black pepper..... 8 ounces  
Ground nutmegs..... 4 ounces  
Ground cloves..... 4 ounces  
Diluted alcohol..... 1 gallon

Mix. Macerate 30 days, and filter.

#### Mead Extract.

Oil of lemon..... 1 ounce  
Oil of clove..... 2 drams  
Oil of cinnamon..... 2 drams  
Oil of nutmeg..... 1 dram  
Oil of allspice..... ½ dram  
Oil of sassafras..... ½ dram  
Oil of ginger..... 1 dram  
Diluted alcohol..... ½ gallon

Mix and filter through powdered talc.

#### Mulberry Extract.

Crush 1 pound fresh mulberries to a pulp, add 1 pint of alcohol. Mix, macerate for 1 week and filter.

#### Nectarine Extract.

Extract of lemon..... 4 fl. ounces  
Extract of bitter almond.. 2 fl. ounces  
Extract of orange..... 4 fl. ounces  
Extract of rose..... 2 fl. ounces  
Extract of vanilla..... 4 fl. ounces  
Cochineal color, a sufficient amount.

Mix the extracts and color as desired with cochineal color.

The proportions of the ingredients of this extract may be varied, if the operator desires.

#### Nectarine Extract.

Vanilla extract..... 6 ounces  
Lemon extract..... 6 ounces  
Pineapple extract..... 3 ounces  
Orange extract..... 1 ounce

Mix.

**Nutmeg Extract.**

Oil of nutmeg..... 2 drams  
 Alcohol, 95 per cent..... 8 ounces  
 Mix and filter.

**Nutmeg Extract.**

Nutmegs, ground..... 3 ounces  
 Mace, ground..... 1 ounce  
 Alcohol, enough to make.. 1 pint  
 Mix, macerate for 8 days and filter.

**Orange Extract.**

Add 1 fluid ounce of sweet oil of orange to 15 fluid ounces of alcohol, and color the mixture to suit the taste with tincture of curcuma modified with a little cochineal color. The shades of the mixture may be regulated by the quantity of curcuma and cochineal used.

**Orange Extract.**

Grate the peel of 10 oranges and add 1 pint of alcohol. Macerate for 1 week and filter.

**Orange Extract, Cheap.**

Cover the peelings of oranges with alcohol, and after 8 or 10 days filter the liquid. This furnishes an extract of orange that, while it is made from the fruit, is much inferior to that made from a good quality of oil of orange.

**Flavoring Extract Peach.**

Bruised peach pits..... 4 drams  
 Oil of bitter almond..... 2 drams  
 Diluted alcohol..... 16 ounces  
 Mix. Macerate 48 hours and filter.

**Peach Extract.**

Crush 1 pound of peaches (also the pits) to a pulp, add 1 pint of alcohol and macerate for 8 days. Then express and filter.

**Pear Extract.**

Crush 1 pound of ripe pears to a pulp and add 1 pint of alcohol. Macerate for 1 week and filter.

**Pear Extract.**

Amyl acetate.....1½ ounces  
 Acetic ether..... ½ ounce  
 Glycerin ..... 2 ounces  
 Alcohol, enough to make.. 1 pint  
 Mix and filter.

**Peppermint Extract.**

Fresh peppermint leaves,  
 crushed ..... 4 ounces  
 Alcohol, enough to make.. 1 pint  
 Mix, macerate for 8 days, filter.

**Peppermint Extract.**

Oil of peppermint..... 1 ounce  
 Peppermint leaves, dried.. ¼ ounce  
 Alcohol, enough to make.. 1 pint  
 Mix, macerate and filter.

**Pineapple Extract.**

Grated pineapple..... 16 ounces  
 Alcohol ..... 6 ounces  
 Mix. Macerate 48 hours in a covered vessel, and strain, adding enough water through the strainer to make the liquid measure 1 pint.

**Pineapple Extract.**

Grated pineapple..... 1 pound  
 Alcohol ..... 1 pint  
 Mix. Macerate for 3 days, express and filter.

**Pistachio Extract.**

Macerate the crushed nuts with diluted alcohol, adding for every pound of the nuts used, ½ ounce each of cinnamon and cloves

and a few pieces of lemon peel. After macerating for 8 days, filter or percolate.

**Pistachio Extract.**

Oil of bitter almond..... 4 drams  
 Oil of neroli..... 4 drops  
 Tincture of vanilla..... 6 ounces  
 Alcohol, enough to make.. 1 pint  
 Mix and filter.

**Pineapple Extract.**

Oil of lemon..... 1 dram  
 Butyric ether..... 2 drams  
 Acetic ether..... 1 ounce  
 Spirit of nitrous ether... 2 drams  
 Glycerin ..... 1 ounce  
 Alcohol, enough to make.. 1 pint

Mix.

**Pistachio Extract.**

Oil of sweet orange..... ½ dram  
 Amyl acetate..... 3 drams  
 Oil of bitter almond..... 3 drams  
 Butyric ether..... 3 drams  
 Acetic ether..... 6 drams  
 Alcohol, enough to make.. 1 pint

Mix.

**Plum Extract.**

Crush 1 pound of plums to a pulp, breaking the pits; then add 1 pint of alcohol, macerate 8 days, express and filter.

**Plum Extract.**

Acetic ether..... ½ ounce  
 Aldehyde ..... ½ ounce  
 Butyric ether..... 2 drams  
 Formic ether..... 1 dram  
 Glycerin ..... 4 ounces  
 Alcohol, enough to make.. 1 pint  
 Color to suit.

Mix.

**Quassia Extract.**

Quassia chips.....1½ ounces  
 Diluted alcohol..... 1 pint  
 Mix, macerate 3 days and filter.

**Quince Extract.**

Deodorized alcohol..... 12 ounces  
 Water ..... 4 ounces  
 Pure quince juice..... 3 ounces  
 Quince ether..... 2 ounces  
 Oil of cinnamon ..... 1 dram  
 Oil of cloves ..... 1 dram  
 Tincture of saffron, to color.

Mix and filter through powdered talc.

**Quince Extract.**

Fluidextract of orris..... 1 ounce  
 Oenanthic ether..... ½ ounce  
 Linalyl formate..... 1 dram  
 Glycerin ..... 1 ounce  
 Alcohol, enough to make.. 1 pint

Mix.

**Raspberry Extract.**

Upon 50 pounds of the fresh and cleaned berries pour 14 gallons of 85 per cent alcohol. Let the mixture stand 24 hours, then add about 6 gallons of water, and distill off 13 gallons.

**Raspberry Extract.**

Fluidextract of orris root. 2 fl. ounces  
 Acetic ether..... ½ fl. ounce  
 Oil of cognac..... 10 drops  
 Butyric ether..... 5 drops  
 Diluted alcohol..... 16 fl. ounces

Mix, color to a dark red with tincture of cochineal, and after a few days filter, if necessary.

**Raspberry Extract.**

Crush 1 pound of fresh raspberries to a pulp, add 1 pint of alcohol, let stand 8 days, express and filter.



**Raspberry Extract.**

One pound of fresh raspberries and one pound of granulated sugar are put in layers at a moderately warm temperature. After 24 hours, express and pour one pint of alcohol through the strainer. Mix all together.

**Raspberry Extract.**

Fresh raspberries.....	1 pound
Angelica wine.....	8 ounces
Brandy .....	8 ounces
Alcohol .....	8 ounces

Mash all together, and express after 24 hours.

**Root Beer Extract.**

In a suitable vessel place 5 drams each of Prince's pine, dandelion root, sassafras, American sarsaparilla, Jamaica ginger, hops, add 3 gallons boiling water, and keep covered and hot, but not boiling, for 3 hours; cool partially; strain through a cloth and add 5 pounds of white or coffee sugar (or 5 pints molasses or syrup). When dissolved, transfer to a large jar and make up to 5 gallons with water. Add  $\frac{1}{2}$  pint fresh brewer's yeast (or sufficient compressed yeast), stir, allow to remain in a moderately warm place, and in from 24 to 72 hours it will be fit for use. The beaten white of 1 or 2 eggs or a little isinglass is often employed for clarifying.

**Root Beer Extract.**

Fluidextract of American sarsaparilla .....	10 fl. drams
Fluidextract of pipsissewa. ....	10 fl. drams
Fluidextract of wintergreen .....	4 fl. drams
Fluidextract of licorice....	4 fl. drams
Oil of wintergreen .....	48 minims
Oil of sassafras .....	24 minims
Oil of cloves .....	12 minims
Alcohol .....	10 fl. ounces

Mix 9 gallons of warm water, 1 gallon of refined molasses and 1 quart of yeast, add the above "extract," and set aside in a warm place to ferment. This is said, also, to give satisfaction if the yeast and fermentation are omitted and the ingredients drawn from an ordinary soda fountain well charged with gas.

**Root Beer Extract.**

Oil of wintergreen .....	4 ounces
Oil of sassafras .....	4 ounces
Oil of anise .....	2 ounces
Oil of orange .....	2 ounces
Oil of nutmeg .....	4 drams
Oil of cloves .....	4 drams
Tincture of vanilla.....	1 pint
Fluidextract of sarsaparilla .....	4 pints
Fluidextract of licorice ...	4 pints
Fluidextract of ginger .....	2 pints
Fluidextract of althaea ...	2 pints
Fluidextract of angelica ..	8 ounces
Fluidextract of soap bark. ....	8 ounces
Caramel .....	3 gallons
Syrup .....	30 gallons

Mix and use as an extract.

**Root Beer Extract.**

Sarsaparilla .....	5 ounces
Spikenard .....	2 ounces
Wintergreen .....	1 ounce
Birch bark.....	1 ounce
Sassafras .....	1 ounce
Wild cherry.....	$\frac{1}{2}$ ounce
Prickly ash.....	1 ounce
Jamaica ginger.....	$\frac{1}{4}$ ounce
Nutmeg .....	$\frac{1}{4}$ ounce

Reduce all to powder, and percolate  $\frac{1}{2}$  gallon with a mixture of 2 parts of water and 1 part of alcohol.

**Root Beer, Old Fashioned.**

A root beer easily prepared may be made by the addition of  $1\frac{1}{2}$  gallons of molasses to 5 gallons of boiling water. Allow to stand for 3 hours, then add bruised sassafras bark, wintergreen bark, sarsaparilla root, of each  $\frac{1}{4}$  pound, yeast  $\frac{1}{2}$  pint and enough water to make 15 gallons. After this has fermented for 12 hours it can be drawn off and bottled.

**Rose Extract.**

Red rose leaves.....	2 ounces
Oil of rose.....	1 dram
Alcohol .....	2 pints

Mix, macerate and filter.

**Rose Extract.**

Deodorized alcohol.....	12 ounces
Water .....	3 ounces
Extract of rose geranium.....	$1\frac{1}{2}$ ounces
Otto of roses.....	$\frac{1}{2}$ dram
Color with tincture of alkanet.	

Mix and filter through powdered talc.

**Sarsaparilla Extract.**

One pound sarsaparilla, 4 pints boiling water; digest 2 hours; bruise the root, boil for two hours, filter and express the liquid; repeat the decoction with 2 pints of water, as before; evaporate the mixed liquids to the consistence of a thin syrup and when cold enough add sufficient alcohol to make up to 16 fluid ounces.

**Sarsaparilla Extract.**

Sarsaparilla .....	$3\frac{1}{2}$ pounds
Distilled water.....	3 gallons

Boil to 12 pints, pour off the liquor and strain while hot; again boil the sarsaparilla in 2 gallons water to half and strain; evaporate the mixed liquors to 18 fluid ounces; when cold, add 2 fluid ounces alcohol.

**Sarsaparilla Extract, for Soda.**

Powdered extract of licorice .....	2 ounces
Oil of wintergreen .....	40 drops
Oil of sassafras .....	60 drops
Fluidextract of sarsaparilla .....	2 fl. ounces
Liquor caramel.....	4 fl. ounces
Diluted alcohol.....	10 fl. ounces

Mix. Macerate 48 hours, and filter. One ounce of this extract to one pint of syrup produces a satisfactory flavor.

**Sarsaparilla Extract.**

Oil of sassafras .....	6 drams
Oil of wintergreen .....	4 drams
Oil of anise .....	2 drams
Alcohol, enough to make..	8 ounces

Mix.

**Sassafras Extract.**

Oil of sassafras.....	4 drams
Ground sassafras bark....	1 ounce
Alcohol .....	16 ounces

Mix. Macerate three days and filter.

**Spirit of Savoury Spices.**

Black pepper.....	1 ounce
Allspice .....	$\frac{1}{2}$ ounce
Nutmeg .....	$\frac{1}{4}$ ounce

Mix. Bruise, and infuse in 16 fluid ounces of brandy for 10 days, then filter.

**Spearmint Extract.**

Prepare in the same way as directed for "Peppermint Extract."

**Spice Extract.**

Black pepper.....	4 ounces
Turmeric .....	3 drams
Coriander .....	1½ drams
Pimenta .....	3 drams
Nutmeg .....	3 drams
Cloves .....	3 drams
Cinnamon .....	3 drams
Caraway .....	3 drams
Alcohol .....	1 pint

Mix and reduce all to fine powder, macerate in the alcohol, filter, adding enough alcohol through the filter to obtain 1 pint.

**Strawberry Extract.**

Bruise 4½ pounds of strawberries; pour 3 quarts of alcohol over the mass, let it stand for some time and filter. The product will make about a gallon of the extract.

**Strawberry Extract.**

Strawberries, crushed....	16 ounces
Alcohol .....	16 ounces

Mix and macerate 48 hours in a covered vessel.

**Strawberry Extract.**

Oil of wintergreen .....	1 dram
Nitrous ether.....	1 dram
Acetic ether.....	5 drams
Butyric ether.....	5 drams
Glycerin .....	1 ounce
Diluted alcohol, enough to make .....	1 pint

Mix and filter through powdered talc.

**Spirit Soup Herbs.**

Lemon thyme.....	1 ounce
Winter savory.....	1 ounce
Sweet marjoram.....	1 ounce
Sweet basil.....	1 ounce
Grated lemon peel.....	½ ounce
Shallots .....	½ ounce
Celery seed.....	1 dram

Mix and infuse in a pint of brandy for 10 days.

**Tonka Extract.**

As a flavoring, extract of tonka is rarely sold as such in the market, but is used extensively to adulterate the extract of vanilla, some of the so-called "extracts" of which are almost, if not entirely, composed of it.

Tonka .....	1 ounce
Balsam of peru.....	¼ ounce
Sugar,	
Alcohol,	

Water, of each, a sufficient quantity.

Reduce the beans and balsam of peru to a powder with magnesium carbonate, gradually add the sugar to absorb the juice. Transfer to a percolator and cover with diluted alcohol. When the liquid appears at the exit, cork the percolator and allow the maceration to progress for a period of 24 hours. Then remove the stopper and allow the percolation to progress slowly until one pint of tincture is obtained.

**Tonka Extract.**

Tonka .....	10 ounces
Prunes, freed from the seeds .....	1 pound
Raisins .....	4 ounces
Currants .....	3 ounces
Balsam of peru.....	3 ounces
Orris root, powdered.....	4 ounces
New Orleans molasses....	1 quart
Alcohol,	
Water, of each sufficient.	

Bruise the tonka beans and digest for two or three hours in one quart of hot water.

Cut the fruits small and cover them with a mixture of water, 1 gallon; alcohol, 5 pints. To this add the tonka (both beans and liquid), macerate for ten days, then add the balsam and filter. Lastly, add enough diluted alcohol to make the extract measure 2¼ gallons and color with caramel.

**Tonka Extract.**

Tonka beans, ground.....	4 ounces
Diluted alcohol.....	1 pint

Mix, macerate for 8 days and filter.

**Vanilla Extract.**

Take one pound of vanilla beans, long, of good flavor, cut into small pieces and bruise in a mortar; macerate the same in one pint of diluted alcohol, U. S. P., '80, shaking occasionally for two weeks, then transfer to a percolator and add gradually diluted alcohol, sufficient quantity, to make two pints of finished extract.

**Vanilla Extract.**

Vanilla beans.....	5 pounds
Alcohol .....	5 gallons
Water .....	3 gallons

Cut the beans in a sausage mill.

Macerate for 8 days and filter.

**Vanilla Extract.**

Vanilla, good quality, 1 ounce, cut into small pieces and triturate with 2 ounces coarse granulated sugar. Place in a percolator and throw on dilute alcohol until a pint of tincture has passed, add this to 1 pint simple syrup and mix.

**Vanilla Extract.**

Four ounces of Mexican vanilla beans, cut small, and granulated sugar are rubbed up thoroughly together, then moistened with 50 per cent alcohol, packed in a percolator, macerated 24 hours, and then displaced at the rate of 30 drops per minute until 4 pints of extract are obtained.

**Flavoring Extract Vanilla.**

Vanilla .....	1 ounce
Potassium carbonate.....	20 grains
Boiling water.....	2 ounces

Cut the vanilla small, dissolve the potassium carbonate in the water and pour upon the vanilla contained in a gallipot. Cover and set aside until cold. Then transfer to a bottle and add

Musk .....	1 grain
Alcohol .....	14 ounces

Macerate four days, filter and wash the filter with alcohol, enough to make 16 ounces.

**Vanilla and Tonka Extract.**

Vanilla bean.....	1¼ pounds
Tonka beans.....	2 pounds
Alcohol .....	5 gallons
Water .....	3 gallons

Macerate for 8 days and filter.

**Vanilla and Tonka Extract.**

Vanilla .....	¾ ounce
Tonka .....	¼ ounce

Sugar, water, alcohol, of each a sufficient quantity.

Reduce the beans to a powder, with sugar gradually added to absorb the juice; pack in a prepared percolator, and extract with dilute alcohol, using enough to produce one pint of the extract.

**Vanilla Extract.**

Vanilla, fine.....  $\frac{1}{2}$  ounce  
 Sugar, about.....  $\frac{1}{4}$  ounce  
 Alcohol,  
 Water,  
 Of each a sufficient quantity.

Cut the vanilla beans transversely into thin slices, place in an iron mortar, and by concussion, gradually adding sugar to absorb the juice, crush the bean until reduced to the condition of a coarse powder. Prepare a percolator for percolation, introduce the powder in the usual manner, press gently, and cover with dilute alcohol (about 20 fluid ounces). When the liquid appears at the exit, cork the percolator and allow maceration to progress for a period of 24 hours. Then remove the stopper and allow the percolation to proceed slowly until 1 pint of tincture is obtained.

**Vanilla Extract.**

Prime vanilla bean..... 4 ounces  
 Tonka bean..... 2 ounces  
 Glycerin ..... 8 ounces  
 Alcohol ..... 3 pints  
 Water .....  $1\frac{1}{2}$  pints  
 Macerate for 8 days and filter.

**Vanilla Extract (With Tonka).**

Vanilla beans in small pieces, 3 ounces, rubbed up in a mortar with two or three times its bulk of sugar, and then 6 ounces of tonka beans in fine powder added and the whole mixed, packed firmly in a percolator without moistening, and then percolate with a mixture of 3 quarts of water and 1 quart alcohol.

**Vanilla Extract (Imitation).**

Ten ounces bruised tonka beans digested for two hours in a quart of hot water. Then take 1 pound of prunes (freed from the seeds), 4 ounces raisins, 3 ounces currants, all cut small, and 4 ounces powdered orris root. Cover with a mixture of 5 pints of alcohol and 1 gallon of water. To this add the tonka, both the beans and the liquid, macerate for 10 days, add 3 ounces balsam of peru and 1 quart New Orleans molasses, filter, lastly add enough diluted alcohol to make the measure up to  $2\frac{1}{4}$  gallons. If desired, color with solution of caramel.

**Vanilla Extract (Imitation).**

Vanillin ..... 2 drams  
 Diluted alcohol..... 1 pint  
 Caramel, sufficient.  
 Mix and dissolve.

**Vanilla Extract (Imitation).**

Vanillin ..... 1 dram  
 Cumarin ..... 10 grains  
 Glycerin ..... 2 ounces  
 Alcohol ..... 3 ounces  
 Water, enough to make... 16 ounces  
 Caramel, sufficient to color.  
 Mix and dissolve.

**Vanilla Extract (Imitation).**

Cumarin .....  $\frac{1}{2}$  dram  
 Glycerin ..... 2 ounces  
 Tincture of tonka ..... 4 ounces  
 Water, enough to make... 1 pint  
 Mix and filter.

**Wintergreen Extract.**

Oil of wintergreen..... 1 ounce  
 Alcohol ..... 15 ounces  
 Tincture of cudbear, sufficient.  
 Mix.

**Wintergreen Extract.**

Wintergreen ..... 2 ounces  
 Sassafras ..... 2 ounces  
 Dandelion ..... 1 ounce  
 Calamus ..... 1 ounce  
 Diluted alcohol, enough to  
 make ..... 1 pint

Reduce all the drugs to a fine powder, mix with the alcohol and macerate for 8 days. Filter, to obtain 1 pint.

**Standard and Imitation Extracts.**

Standard formulas which answer the requirements of the State law will be found in the National Formulary for both extract (essence) of orange and extract of lemon, while the Pharmacopoeia furnishes formulas for spirit (essence) of cinnamon and tincture (extract) of vanilla. The books named furnish certain standards, and in them are printed full directions for manufacturing the preparations named. There will be no violation of the food and drugs act if the manufacturer follow these formulas and label the preparations thus made with their true names. For "extract of vanilla comp." the tincture of vanillin compound of the National Formulary is sometimes given, but under the Federal law this preparation cannot be labeled as "extract of vanilla comp." If one wishes to sell it under any other than the N. F. title, it should be labeled as "imitation vanilla flavor." Under the Federal law no imitation extracts may be legally sold unless so labeled, while in some of the States this concession is variously modified. That artificial fruit essences do not duplicate the flavor of the fruit they are supposed to simulate must be admitted by all who give the subject any kind of attention.

**Arrak Essence.**

Vanilla, cut..... 2 grams  
 Tea leaves (Pekoe)..... 50 grams  
 Powdered catechu..... 10 grams  
 Rectified pyroligneous acid 50 grams  
 Formic ether.....100 grams  
 Spirit nitrous ether..... 10 grams  
 Alcohol (90 per cent.)...350 grams

Macerate for 8 days, then strain and filter. Twenty to 25 grams added to one liter of alcohol (55 per cent.) produces arrak (*spiritus oryzae*).

**Banana Essence.**

Essence of pear..... 2 ounces  
 Butyric ether..... 2 ounces  
 Oil of lemon..... $2\frac{1}{2}$  drams  
 Ethyl benzoate.....  $\frac{1}{2}$  ounce  
 Tincture of orris, enough  
 to make..... 1 gallon

Mix.

**Cider Essence.**

Rectified spirit..... 7 pints  
 Water ..... 2 pints  
 Amyl valerianate..... 6 ounces  
 Butyric ether..... 3 ounces  
 Amyl butyrate ..... 1 ounce  
 Amyl acetate..... 1 ounce  
 Acetic ether..... 1 ounce

Color faintly with caramel.

**Cognac Essence.**

Cocinic ether.....100 grams  
 Acetic ether.....100 grams  
 Tincture vanilla..... 1 gram  
 Tincture galls..... 15 grams  
 Orange flower water...2,500 grams  
 Alcohol (90 per cent.)...2000 grams

Mix.



**Cognac Essence.**

Pelargonic ether.....	1 part
Alcohol .....	20 parts

Mix.

**Maraschino Essence (Imitation).**

Essence of almond (1 in 10)	12 minims
Oil of neroli.....	2 minims
Essence of vanilla.....	20 minims
Essence of jasmín .....	4 minims
Alcohol .....	2 ounces

Mix.

**Orange Wine Essence.**

Oil of sweet orange.....	15 minims
Essence of vanilla.....	2 drams
Tincture of orange .....	1½ ounces
Tincture of lemon .....	½ ounce
Tartaric acid.....	2 ounces
Salicylic acid.....	½ dram

Mix.

**Peach Essence.**

Acetic ether.....	5 fl. drams
Butyric ether.....	5 fl. drams
Amyl acetate.....	5 fl. drams
Oil of wintergreen.....	30 minims
Oil of bitter almond (de- prived of hydrocyanic acid) .....	2 fl. drams
Deodorized alcohol, enough to make.....	16 fl. ounces

Mix.

**Jargonelle Pear Essence.**

The "artificial extract," known in commerce as "essence of jargonelle pear," is an alcoholic solution of amyl acetate modified by the addition of other ethers. Amyl acetate is prepared by the action of glacial acetic acid on amyl alcohol, in the presence of a small quantity of sulphuric acid. The ethereal layer is separated, well washed with water, again separated, and rectified by distillation. There are variant formulas for the preparation of the essence, the following being typical:

Deodorized alcohol.....	60 fl. ounces
Pure pear juice.....	20 fl. ounces
Amyl acetate.....	10 fl. ounces
Acetic ether.....	5 fl. ounces
Glycerin .....	5 fl. ounces

Mix.

**Pineapple Essence.**

Ethyl acetate.....	½ ounce
Amyl acetate.....	½ ounce
Ethyl butyrate.....	½ ounce
Chloroform .....	1 dram
Alcohol, enough to make..	20 fl. ounces

Mix.

**Pineapple Essence (Pineapple-Oil).**

Butyric ether.....	10 grams
Alcohol (90 per cent.).....	100 grams
Tincture lemon peel,	
Tincture orange peel, of	
of each.....	1 gram
Rose water.....	20 grams

Mix.

**Port Essence.**

Acetic ether.....	1 ounce
Essence of grape .....	4 ounces
Essence of vanilla.....	4 ounces
Tincture of kino.....	4 ounces
Essence of raspberry.....	8 ounces

Mix.

**Rum Essence.**

Butyric ether.....	1 ounce
Spirit of nitrous ether....	1 ounce
Caramel coloring.....	1 ounce
Rectified spirit, enough to make .....	6 ounces

Mix.

**Raspberry Essence Conc.**

Florentine orris, powdered	24 ounces
Rectified spirit.....	5 pints
Water .....	2 pints

Macerate seven days, press and filter. To each pint add

Butyric ether.....	4 drams
Acetic ether.....	1 dram
Amylo-acetic ether.....	¼ dram
Oil of orris.....	1 dram
Rectified spirit.....	2 ounces
Chloroform .....	½ dram
Color .....	q. s.

Mix.

Raspberry coloring for the above.

Croceine scarlet.....	1 ounce
Boiling water.....	20 ounces

Mix and dissolve.

**Ratafia Essence.**

Oil of bitter almond.....	1 part
Tincture of orange peel....	1 part
Rectified spirit.....	6 parts

Mix.

**Rum Essence.**

Crude spirit of nitrous ether .....	100 grams
Tincture of vanilla.....	10 grams
Tincture of galls.....	60 grams
Rectified pyroligneous acid	50 grams
Tincture of burnt sugar,	
Alcohol, of each.....	150 grams

Mix.

**Rum Essence.**

Vanilla .....	2.5 grams
Oil of birch.....	10.0 grams
Tormentil root, cut.....	20.0 grams
Cassia buds, bruised.....	2.5 grams
Pulverized soot.....	15.0 grams
Common salt.....	25.0 grams
Formic ether.....	100.0 grams
Spirit of nitrous ether....	15.0 grams
Alcohol (90 per cent.).....	500.0 grams
Caramel .....	50.0 grams

Macerate for 8 days and filter. A spirit (rum) may be prepared by adding 15 to 20 grams to 1 liter of alcohol (53 to 55 per cent.).

**Sherry Essence.**

Oenanthic ether.....	1 ounce
Nitrous ether.....	2 ounces
Rectified spirit, enough to make .....	20 ounces

Mix.

**Strawberry Essence.**

Ethyl acetate.....	3 drams
Amyl acetate.....	½ ounce
Tartaric acid.....	1 dram
Spirit of nitrous ether....	1 dram
Tincture of orris.....	3 ounces
Glycerin .....	3 ounces
Alcohol, enough to make..	20 fl. ounces

Mix.

**Maple Flavor (Imitation).**

There is, as a matter of fact, no true maple flavoring except that derived from the sap of the maple, *Acer saccharinum*, and other species of the genus *Acer*. However, it is stated on pretty good authority that an artificial maple flavor can be given to simple syrup or glucose by the addition of aqueous extract of guaiac wood. The wood, finely rasped, is boiled down to the consistence of an extract. This is shaken up with ether, or a mixture of alcohol and ether, to get rid of the resinous matter taken up in boiling the wood. Some manufacturers, it is said, attain the same result, though not so completely, by adding cold water to the aqueous extract while still hot, thereby causing the resinous matter to

precipitate. After standing a little while, the clear extractive is poured off and is ready for use.

#### Maple Flavor (Imitation).

Make a solution of sugar, two in one, bring to a boil, and remove from the fire; then add to it strips of the inner bark of hickory (*Carya alba*), or white heart hickory (*carya tomentosa*),  $\frac{1}{2}$  ounce to each pint of syrup; let stand 10 minutes and strain.

#### Maple Flavor (Imitation).

Red corn cobs, 4; water, 2 pints; light brown sugar, enough. Boil the cobs in the water until the latter is quite red, strain, and add sufficient brown sugar to make a heavy syrup. When cold, the syrup is said to be very pleasant to the taste.

#### Maple Essence.

Oil of juniper.....	1 dram
Caramel .....	2 ounces
Rectified spirit.....	3 ounces

#### Mix.

Under the Federal Food and Drugs Act, these compounds must be labeled "imitation maple flavoring," or some other designation not antagonistic to the law. It is also possible that the sale of a preparation so labeled might be prohibited by the regulations of some of the States.

#### To Preserve Fruit Juice.

Express the juice of the fruit and fill at once in strong champagne bottles. Fasten the corks. Set the bottles in a large kettle with water and boil the water for  $\frac{1}{2}$  hour. The juices, if stored in cool places, will keep for a long time.

#### To Preserve Fruit Juices.

The expressed juices are filtered through a filter prepared by stuffing absorbent lint cotton into the neck of the funnel or receiver and filling the latter to a certain height with pure silica, moderately coarsely ground. Cleanly washed river sand, from which the dust and smaller particles have been sifted out, will answer, providing it has first been roasted to remove all organic matter. The filtered juices are then poured into a small vessel (not over 1 liter capacity), placed in a water bath, and the temperature raised to 75° C. (165° to 170° F.) and kept thus for one hour (two would be better). In the meantime the ultimate containers or vessels in which the juice is to be sent to the trade are being sterilized in an oven, especially prepared for the purpose, and from which they are only removed as needed for filling. When ready to fill, add to the juice one-tenth of one per cent. of benzoic acid and pour the juice into the sterilized bottle through a funnel, the neck of which is lightly packed with absorbent cotton. Cork quickly and seal at once. The corks should paraffined.

#### Preservation of Fruit Juices.

The clarified juice is heated to boiling in a copper vessel and then poured into a dish. Meanwhile the bottles are provided with stoppers, and are then gradually filled, a space of about two centimeters in the neck being left empty; some alcohol is then poured upon the hot liquid, and the bottle is quickly stoppered, the cork being further secured as the liquid cools. The alcohol which evaporates into the empty space is sufficient for the preservation of the liquid. The juice of fresh herbs may be preserved in the same manner.

#### Preservation of Lemon Juice.

Mix the lemon juice with enough alcohol (about 50 per cent.) to clear the juice. Set aside until perfectly clear; decant the clear liquid, distill off the alcohol at a very moderate temperature and put the remaining liquid into suitable bottles, which are heated to near the boiling point for about an hour and then hermetically sealed. By this method the flavor of the lemon juice may be kept unaltered for a considerable length of time.

#### Lime Juice and Glycerin.

Nut oil.....	4 pints
Lime water.....	3 pints
Sol. of saccharate of lime	4 ounces
Oil of lemon .....	$\frac{1}{2}$ ounce
Oil of bergamot .....	1 dram
Oil of neroli .....	6 drops
Oil of cinnamon .....	6 drops

Add the solution of saccharate of lime to the lime water, then add the oil and shake vigorously in a bottle capable of holding twice the quantity. Let stand a few days, and if any oil floats on the surface, add more of the saccharate of lime. Finally, add the oils and let stand a week.

#### Lime Juice and Glycerin.

Oil of almond (sweet) ...	2 ounces
Oil of lemon .....	2 drams
Potassium carbonate.....	2 drams
Glycerin .....	1 ounce
Lime water.....	8 ounces

#### Mix.

## MANUFACTURED OR ARTIFICIAL MINERAL WATERS.

#### Aix la Chapelle Water.

Sodium bicarbonate.....	1 1-3 ounces
Sodium chloride.....	2 2-3 ounces
Calcium chloride.....	168 grains
Sodium sulphate.....	1 1-4 ounces
Simple sulphuretted water	9 pints
Water .....	71 pints

Put in a fountain and charge with carbonic acid gas.

#### Apollinaris Water.

Sodium bicarbonate .....	1 1-2 ounces
Sodium chloride .....	1 1-2 ounces
Sodium sulphate .....	4 drams
Magnesium carbonate.....	4 drams

Put in a fountain with 10 gallons of water, and charge with gas.

#### Apollinaris Water.

Sodium carbonate .....	2,835.27 grains
Sodium sulphate .....	335.20 grains
Sodium silicate .....	10.00 grains
Magnesium chloride.....	198.10 grains
Calcium chloride.....	40.20 grains
Potassa-alum .....	57.10 grains
Magnesium carbonate, hydrated .....	158.50 grains
Iron sulphate.....	21.30 grains
Water .....	10 gallons

Mix the first three ingredients with 10 times their weight of water, filter, and add to 9 gallons of water contained in the fountain; mix the next two ingredients with 10 times their weight of water, filter and add; then add the remaining ingredients each separately, dissolved in 10 times its weight of water, add sufficient water to make up to 10 gallons, and charge immediately with carbonic acid gas. The necessity for charging at once is because some of the substances are soluble

only under pressure of carbonic acid, and even then only when freshly precipitated.

#### Baden Water.

Magnesium chloride.....	160 grains
Calcium chloride.....	3,200 grains
Iron perchloride.....	20 grains
Sodium chloride.....	2,400 grains
Sodium sulphate.....	800 grains
Sodium carbonate.....	80 grains
Water, carbonated.....	10 gallons

#### Brighton Chalybeate Water.

Iron sulphate.....	160 grains
Sodium chloride.....	160 grains
Calcium chloride.....	160 grains
Sodium carbonate.....	240 grains
Carbonated water.....	10 gallons

#### Carlsbad Water.

Potassium sulphate.....	96 grains
Sodium chloride.....	600 grains
Sodium bicarbonate.....	1,700 grains
Sodium sulphate, dried.....	920 grains
Calcium sulphate, pre-	
cipitated.....	300 grains
Magnesium sulphate, dried	128 grains

To make 10 gallons. For one tumbler about 24 grains.

#### Carlsbad Water.

Potassium sulphate.....	2 parts
Sodium chloride.....	18 parts
Sodium carbonate (clear	
crystals).....	61 parts
Sodium sulphate (crystal-	
lized).....	88 parts
Distilled water.....	5,000 parts

Dissolve the potassium sulphate and sodium chloride in the distilled water and add this solution to the other two salts previously melted in a tared capsule and at a gentle heat in their own water of crystallization. Evaporate the mixture to about 180 parts and set aside to cool, with frequent stirring so as to prevent the formation of large crystals. Distribute any remaining water of crystallization uniformly over the crystals and dry cautiously by exposure to the air and so that it shall retain its water of crystallization; 27 grains of this salt in 6 fluid ounces of water contain the essential properties of an equal volume of Carlsbad water.

#### Carlsbad Water.

Potassium sulphate.....	10 grains
Sodium chloride.....	1 dram
Sodium sulphate.....	1½ drams
Sodium bicarbonate.....	½ ounce
Water.....	1 gallon

Mix and dissolve.

#### Congress Water.

Sodium chloride.....	1½ ounces
Potassium tartrate.....	½ ounce
Sodium bicarbonate.....	½ ounce
Magnesium carbonate.....	2 drams
Ammonium chloride.....	1 dram

Water to make 10 gallons; charge with gas to 125 pounds.

#### Ems Water (Kraenchen).

Sodium chloride.....	1 ounce
Sodium bicarbonate.....	2 drams
Potassium sulphate.....	25 grains
Calcium sulphate, pre-	
cipitated.....	½ ounce
Magnesium sulphate, dry.	3 drams

For 10 gallons.

#### Contrexville Water.

Sodium bicarbonate.....	2 ounces
Sodium sulphate.....	6 ounces
Magnesium sulphate.....	6 ounces
Sodium chloride.....	2 ounces
Carbonic acid water.....	10 gallons

#### Eger Water.

Sodium carbonate.....	400 grains
Sodium sulphate.....	12 ounces
Sodium chloride.....	800 grains
Magnesium sulphate.....	240 grains
Calcium chloride.....	400 grains
Carbonated water.....	10 gallons

#### Friedrichshall Bitter Water.

Potassium sulphate.....	1 dram
Sodium sulphate, dry.....	5 ounces
Sodium chloride.....	12 ounces
Sodium bicarbonate.....	1 ounce
Sodium bromide.....	1 dram
Calcium sulphate, pre-	
cipitated.....	1½ ounces
Magnesium sulphate, dry..	12 ounces

For 10 gallons.

#### Geyser Springs Water.

Ammonium chloride.....	2 drams
Sodium bicarbonate.....	½ ounce
Sodium sulphate.....	1 ounce
Lithium citrate.....	4 grains
Water, enough to make..	10 gallons

Charge with gas to 125 pounds.

#### Harrogate Water.

Sodium chloride.....	100 grains
Calcium chloride.....	10 grains
Magnesium chloride.....	6 grains
Sodium bicarbonate.....	2 grains
Water.....	18½ ounces

Dissolve and add simple sulphuretted water, 1½ ounces.

#### Hunyadi Janos Water.

Potassium sulphate.....	1 dram
Calcium sulphate.....	1½ ounces
Magnesium sulphate.....	25 ounces
Sodium carbonate.....	20 ounces

Put in a fountain with ten gallons of water, and charge with gas.

#### Hunyadi Janos Water.

Potassium sulphate.....	½ dram
Sodium chloride.....	2 ounces
Sodium bicarbonate.....	6 ounces
Sodium sulphate, dry.....	20 ounces
Calcium sulphate, pre-	
cipitated.....	2 ounces
Magnesium sulphate, dry..	3 ounces
Iron sulphate, dry.....	10 grains

For 10 gallons.

#### Kissingen Water.

Sodium chloride.....	2½ ounces
Sodium phosphate.....	1 ounce
Magnesium carbonate.....	½ ounce
Magnesium sulphate.....	1½ ounces
Precipitated iron carbonate	2 drams

Triturate with 1 pint water, in large wedgwood mortar; add water to make 10 gallons; charge to 125 pounds. Don't filter; the carbonic acid gas will clear the mixture.

#### Marienbad Water.

Sodium carbonate.....	3,200 grains
Sodium sulphate.....	7,680 grains
Magnesium sulphate.....	640 grains
Sodium chloride.....	1,200 grains
Calcium chloride.....	800 grains
Carbonated water.....	10 gallons



**Mialhe's Aerated Chalybeate Water.**

Water .....	1 pint
Citric acid.....	1 dram
Iron citrate.....	15 grains
Dissolve, and add	
Sodium bicarbonate.....	75 grams

**Mont d'Or Water.**

Sodium bicarbonate .....	5,600 grains
Iron sulphate.....	54 grains
Sodium chloride .....	960 grains
Sodium sulphate .....	40 grains
Calcium chloride.....	320 grains
Magnesium chloride.....	160 grains
Carbonated water.....	10 gallons

**Naples Water.**

Crystallized sodium carbonate .....	1,200 grains
Fluid magnesia.....	80 ounces
Simple sulphuretted water .....	160 ounces
Carbonated water.....	10 gallons

Introduce the sulphuretted water into the bottles last.

**Passy Water.**

Iron sulphate.....	160 grains
Sodium chloride .....	240 grains
Sodium carbonate .....	320 grains
Magnesium chloride.....	160 grains
Carbonated water.....	10 gallons

**Pullna Bitter Water.**

Sodium sulphate, dry.....	12 ounces
Potassium sulphate.....	1 ounce
Sodium chloride .....	3 ounces
Sodium bicarbonate .....	2 ounces
Magnesium sulphate, dry.....	24 ounces
Calcium sulphate, precipitated .....	6 drams

For 10 gallons.

**Pyrmont Water.**

Lithium carbonate.....	10 grains
Sodium bicarbonate .....	3 ounces
Sodium sulphate, dry.....	4 ounces
Sodium chloride .....	10 ounces
Magnesium sulphate, dry.....	3 ounces
Calcium sulphate, precipitated .....	3 ounces

For 10 gallons.

**Saratoga Water.**

Sodium chloride.....	3 ounces
Magnesium carbonate.....	1 ounce
Sodium bicarbonate .....	2 ounces
Sodium sulphate .....	2½ ounces
Water, enough to make.....	10 gallons

Triturate first articles with ½ gallon of water, then add the balance of the water; charge with gas to 120 pounds.

**Seltzer Water.**

Calcium chloride.....	1 ounce
Sodium bicarbonate .....	1 ounce
Sodium chloride .....	1 ounce
Magnesium sulphate.....	1 ounce

Mix, add water to make 10 gallons, and charge with gas to 125 pounds.

**Vi Ly (Grande Grille) Water.**

Potassium sulphate.....	30 grains
Sodium chloride .....	34 grains
Sodium bicarbonate .....	930 grains
Magnesium sulphate, dried 10 grains	
Calcium sulphate, precipitated .....	64 grains

Mix intimately. To make 10 quarts. For one tumbler, take about 28 grains.

**Seltzer Water.**

Sodium fluoride .....	0.15 grains
Sodium phosphate .....	0.34 grains
Potassium chloride .....	28.6 grains
Potassium sulphate .....	31.8 grains
Sodium silicate .....	49.1 grains
Sodium carbonate .....	2,190.8 grains
Sodium chloride .....	983.7 grains
Barium chloride.....	0.19 grains
Aluminum chloride....	0.27 grains
Strontium chloride....	1.6 grains
Calcium chloride.....	166.1 grains
Magnesium chloride....	181.0 grains

For 10 gallons of water. The first 7 articles are dissolved in water, and the remaining 5 are dissolved separately (filtered through absorbent cotton), the solutions mixed, then the water added to make 10 gallons, and charged with carbonic acid gas.

**Vichy Salts.**

Sodium bicarbonate .....	2¼ ounces
Sodium chloride .....	22½ grains
Effloresced sodium sulphate .....	1½ drams
Effloresced magnesium sulphate .....	1½ scruples
Dry tartarized iron sulphate .....	1½ grains
Dry tartaric acid, or day sodium bisulphate.....	1½ ounces

Mix the powders, previously dried, and keep in a well-corked bottle.

**Waukesha White Rock Water.**

	Grains in Imperial Gallon.
Sodium carbonate.....	1.28
Calcium bicarbonate.....	17.67
Magnesium bicarbonate....	13.02
Iron bicarbonate.....	0.27
Sodium sulphate.....	1.09
Potassium sulphate.....	0.82
Sodium chloride.....	1.12
Aluminum oxide.....	0.75
Silica .....	1.04

**White Rock Water.**

Sodium carbonate .....	31.9 grains
Sodium sulphate .....	15.4 grains
Sodium silicate .....	16.8 grains
Potassium sulphate.....	6.6 grains
Aluminum chloride.....	15.6 grains
Iron sulphate.....	3.8 grains
Calcium carbonate.....	98.2 grains
Magnesium carbonate.....	112.2 grains
Carbonated water.....	10 gallons

The first four ingredients are dissolved in about 10 times their weight of water; the aluminum chloride is dissolved separately in the same way; as is also the iron sulphate; the calcium and magnesium carbonate should be freshly prepared and moist. The solutions, and the magma of carbonates are mixed separately with the water, which is then charged with carbonic acid in the usual manner.

**Friedrichshall Salts, Artificial.**

Dried Epsom salt.....	1 ounce
Dried sodium chloride....	6 drams
Dried Glauber salt.....	2 drams
Sodium bicarbonate.....	½ dram
Calcium sulphate.....	20 grains

Powder and mix. Take a teaspoonful in a tumblerful of water.

**Hunyadi Salt, Artificial.**

Dried Glauber salt.....	10 drams
Sodium bicarbonate.....	3 drams
Dried Epsom salt.....	2 drams
Sodium chloride.....	1 dram

Powder and mix. A teaspoonful to a tumblerful of water.

**MINERAL WATERS**—Compiled from Analyses of the More Prominent Mineral Waters of Europe, and intended to give imitations of them for Dispensing Purposes. The quantities given are in grams, to produce in each case 50 liters and are as presented in Hager's Pharm. Praxis. As a rule, they are Carbonated to the extent of from 3 to 4 volumes, but can be drawn from the Fountain in the usual way under ordinary pressure. (Concluded on next page.)

	Potassium carbonate.	Sodium sulphate.	Sodium carbonate.	Sodium chloride.	Lithium chloride.	Sodium phosphate.	Sodium silicate.	Magnesium sulphate.	Sodium aluminum sulphate.	Calcium sulphate.	Iron sulphate.	Potassium sulphate.	Magnesium chloride.	Strontium chloride.	Aluminum chloride.	Calcium carbonate.
1—(1) Bilin, Josephsquelle	5.05	4.30	174.25	18.00	0.85	0.60	3.25	10.25	0.85	34.10	1.25	11.29	8.81	0.05	0.20	19.95
2—(2) Bilin, Josephsquelle	.....	40.04	157.84	3.23	.....	0.35	4.63	5.25	.....	33.20	0.14	.....	4.47	.....	.....	5.14
3—Cudowa, Trinkquelle	.....	.....	92.44	.....	.....	.....	.....	42.31	.....	119.27	3.10	.....	5.67	.....	.....	4.30
4—Driburg, Trinkquelle oder Eisenquelle.	.....	.....	32.91	6.79	.....	.....	.....	.....	0.16	.....	9.0	.....	4.95	0.02	.....	.....
5—(1) Eger, Franzensbrunnen	.....	157.5	48.00	39.7	.....	0.26	6.26	.....	.....	.....	3.67	.....	4.95	0.02	0.09	.....
6—(2) Eger, Franzensbrunnen	.....	157.31	53.39	34.14	.....	0.26	6.18	7.43	0.16	.....	1.09	.....	.....	.....	.....	.....
7—(3) Eger, Franzensbrunnen	.....	130.57	45.29	45.91	0.20	0.18	6.48	.....	.....	.....	0.25	.....	0.98	0.018	.....	.....
8—(4) Eger, Salzquelle	.....	116.59	50.58	42.40	0.20	0.027	4.36	.....	.....	.....	0.31	2.36	6.97	0.011	0.065	.....
9—(1) Ems, Kesselbrunnen	.....	116.59	50.58	42.40	0.20	0.027	4.36	.....	.....	.....	0.31	2.36	6.97	0.011	0.065	.....
10—(2) Ems, Kraehen	.....	0.04	87.20	32.31	0.08	0.08	4.82	.....	0.04	.....	0.19	2.14	7.30	0.0028	.....	.....
11—Friedrichshall, Bitterwasser	.....	0.75	33.30	335.39	.....	0.026	5.00	294.49	.....	.....	.....	9.91	199.88	.....	.....	.....
12—Homburg, Elisabethquelle	.....	329.16	33.30	335.39	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
13—Karlsbad, in Bochemen	.....	2.48	95.11	406.42	.....	.....	4.13	.....	.....	.....	0.84	9.33	20.17	0.10	0.03	.....
14—(1) Kissingen, Pandur	.....	250.57	187.57	28.02	.....	0.048	15.06	.....	.....	.....	3.16	.....	3.69	.....	.....	.....
15—(2) Kissingen, Ragoczi	.....	156.90	21.73	.....	0.84	0.28	0.41	41.78	.....	.....	3.78	.....	1.21	.....	.....	.....
16—(1) Kissingen, Ragoczi	.....	59.88	25.93	.....	0.99	0.29	1.31	48.18	.....	.....	0.02	0.48	1.10	.....	.....	.....
17—(1) Kissingen, Ragoczi	.....	0.05	16.02	9.33	.....	0.09	1.00	.....	0.17	.....	0.02	0.48	1.10	.....	.....	.....
18—Lippstange, Arminiusquelle	.....	0.60	16.02	0.61	.....	.....	1.09	17.15	.....	64.32	0.012	0.61	1.10	0.13	.....	.....
19—(1) Marienbad, Ferdinandsbrunnen	.....	11.04	24.36	.....	0.514	0.228	.....	32.55	0.49	.....	7.35	2.356	.....	0.04	.....	.....
20—(2) Marienbad, Kreuzbrunnen	.....	279.94	125.48	67.52	0.27	0.43	.....	686.80	.....	.....	4.23	31.25	91.79	.....	.....	.....
21—Pulna, Bitterwasser	.....	729.12	58.59	.....	.....	.....	.....	746.28	0.08	57.28	1.62	26.62	1.92	0.16	.....	10.24
22—Saxschutz, Bitterwasser	.....	90.41	42.80	.....	0.093	0.052	4.47	16.08	.....	.....	0.562	1.92	1.27	0.16	.....	.....
23—Salzbrunn (Ober-Salzbrunnen Schlesien)	.....	70.26	2.63	6.45	.....	0.03	3.27	.....	.....	.....	3.61	24.54	0.04	.....	.....	.....
24—Schlangenbad, im Nassau'schen	.....	2.73	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
25—Selterser Wasser, Selterwasser	.....	5.0	75.0	50.0	0.15	0.15	2.2	.....	.....	.....	2.5	1.041	10.1	0.12	.....	.....
26—Soden, Milchbrunnen	.....	0.07	31.15	78.47	.....	0.369	8.515	4.635	0.256	.....	0.654	.....	.....	.....	.....	.....
27—Teplitz, Steinbadquelle	.....	1.302	.....	.....	.....	0.369	8.515	4.635	0.256	.....	0.654	.....	.....	.....	.....	.....
28—(1) Vichy, Source des Celestins.	10.87	.....	186.67	4.63	.....	4.55	6.02	12.14	.....	.....	0.35	.....	2.55	0.21	.....	1.796
29—(2) Vichy, Source de la Grande Grille.	12.11	.....	177.41	5.90	.....	6.50	7.11	12.15	.....	.....	0.333	.....	2.58	0.12	.....	.....
30—Weilbach	0.12	0.82	28.04	.....	.....	0.08	1.58	.....	.....	.....	0.24	1.72	.....	.....	0.06	0.65
31—Wildungen, Stadtbrunnen	.....	.....	4.82	0.46	.....	.....	.....	1.96	0.26	.....	2.17	.....	.....	.....	.....	24.58

The constituents of any of the following-named mineral waters may be found by reading that part of the table upon the next page in connection with that given upon this page.

(Continued from preceding page.)

	Calcium chloride.	Sodium bromide.	Potassium chloride.	Manganous sulphate.	Sodium arsenate.	Hydrochloric acid.	Sodium iodide.	Ammonium bicarbonate.	Lithium carbonate.	Barium chloride.	Manganese carbonate.	Magnesium carbonate.	Dry ferric chloride.	Sodium fluoride.	Sodium nitrate.	Vol. carbonic acid gas.
1—(1) Bilin, Josephsquelle .....																3-3½
2—(2) Bilin, Josephsquelle .....					0.06	2.74										3
3—Cudowa, Trinkquelle .....	0.35		0.19								0.13					3
4—Driburg, Trinkquelle oder Eisenquelle .....	13.11															4½
5—(1) Eger, Franzensbrunnen .....	13.17	0.052						0.2	0.24							4
6—(2) Eger, Franzensbrunnen .....	10.33			0.54		3.65	0.001		0.24		0.28					4
7—(3) Eger, Salzquelle .....	10.33															4
8—(4) Eger, Salzquelle .....	11.62			0.05		2.57					0.07					4
9—(1) Ems, Kesselbrunnen .....	9.10									0.012						3-3½
10—(2) Ems, Kraenchen .....	8.65									0.003						2
11—Friedrichshall, Bitterwasser .....	55.75	6.38											4.23			3½
12—Homburg, Elisabethquelle .....	129.93					2.43										3½
13—Karlsbad, in Boehmen .....	24.63	0.12		0.15		8.89	0.0013		0.26					0.34		4
14—(1) Kissingen, Pandur .....	69.00	0.35	12.07					0.89							0.17	3-3½
15—(2) Kissingen, Ragoczi .....	78.12	0.42	14.34					0.21							4.62	4
16—(1) Krankenheil, Jodschwefelwasser .....	3.91						0.08				0.006					3½
17—(2) Krankenheil, Jodsodawasser .....	3.52			0.008		0.53	0.075									3½
18—Lipp Springs, Arminiusquelle .....	15.16															4
19—(1) Marienbad, Ferdinandsbrunnen .....	30.33										0.30					4
20—(2) Marienbad, Kreuzbrunnen .....	28.93										1.56					4
21—Pullna, Bitterwasser .....	19.53	0.0045					0.0008									2½
22—Saidschuitz, Bitterwasser .....	16.47															2½
23—Salzbrunn (Ober-Salzbrunnen, Schlesien) .....	5.49														118.18	3
24—Schlangenbad im Nassau'schen .....	1.80		0.29			1.98										2½
25—Selters, Wasser, Selterwasser .....	25.0															3½
26—Soden, Milchbrunnen .....	20.7		1.09			1.3										3-4
27—Teplitz, Steinbadquelle .....	5.208															3½
28—(1) Vichy, Source des Celestins .....	17.80				0.10											4
29—(2) Vichy, Source de la Grande Grille .....	14.70				0.10											3½
30—Weilbach .....	13.51	0.03	1.21						0.33							4
31—Wildungen, Stadtbrunnen .....											0.342					27.18

The constituents of any of the following-named mineral waters may be found by reading that part of the table upon the preceding page in connection with that given upon this page.



**Carlsbad Salt, Artificial.**

Dried Glauber salt.....1½ drams  
Sodium bicarbonate..... 1 dram  
Sodium chloride..... ½ dram  
Potassium sulphate..... ¼ dram

Powder and mix. A teaspoonful to a tumblerful of water.

**Vichy Salt, Artificial.**

Sodium bicarbonate ..... 5 ounces  
Sodium chloride .....1½ drams  
Potassium sulphate..... 1 dram  
Calcium sulphate..... 1 dram  
Dried Epsom salt..... 20 grains

Mix. A teaspoonful to a tumblerful of water.

**Vichy Salt, Artificial for Soda Water.**

Sodium bicarbonate ..... 10 ounces  
Sodium chloride ..... ½ ounce  
Magnesium sulphate..... 1 dram

Mix and put ½ to one small teaspoonful in a glassful of carbonated water.

**Kissengen Salt, Artificial.**

Sodium chloride ..... 1 ounce  
Sodium bicarbonate ..... 3 drams  
Magnesium sulphate.....1½ drams  
Potassium chloride..... ½ dram

Mix. A teaspoonful to a tumblerful of water.

**Mineral Salts, Tablets.**

Tablets can be made of the preceding artificial salts, by drying the salts in a drying oven, powdering, granulating with alcohol and pressing into tablets of from 20 to 40 grains. One or two tablets will be a dose. By adding dried tartaric acid and sodium bicarbonate, effervescent tablets can be made.

## NON-ALCOHOLIC BEVER- AGES.

**Birch Beer.**

Birch bark..... 1 pound  
Hops ..... 2 ounces  
Pimenta ..... ½ pound  
Ginger ..... ½ pound  
Syrup ..... 12 pints  
Yeast, solid..... 4 ounces

Boil the bark in powder in 6 pints of water, strain, boil again with two pints, mix the liquids and evaporate them to a thin extract. Boil the other drugs, except the yeast, in 2 pints of water, strain and add to the birch extract. Heat and add the syrup. Put into a cask and add 20 gallons of water. Shake and add the yeast. Let stand 2 or 3 days and fill in bottles.

**Birch Beer.**

Essence of wintergreen ... ¼ ounce  
Essence of sassafras ..... ½ ounce  
Essence of birch ..... 2 ounces  
Cinnamon, in powder..... 2 teaspoonfuls  
Hops ..... 2 teacupfuls  
Yeast, liquid..... 2 teacupfuls  
Sugar,

Water, of each, a sufficiency.

Macerate the essences and drugs in 1 gallon of water for 12 hours; add sufficient sugar to suit, then the yeast and enough water to make 2 gallons. Set aside for 2 days, strain and bottle.

**Dandelion Root Beer.**

Tincture of ginger..... 8 ounces  
Oil of wintergreen ..... 2 drams  
Oil of sassafras ..... 1 dram  
Fluidextract of dandelion. 1 ounce  
Fluidextract of wild cherry 1 ounce  
Fluidextract of sarsaparilla 1 ounce  
Sugar, enough to suit.  
Water, enough to make... 1 gallon

Mix the drugs and add ½ gallon of water, then add the sugar, and enough water to make 1 gallon. Filter.

**Golden Hop-Ale.**

This is a good recipe, but the novice in brewing has to be most careful in carrying out all the details of the directions:

Old hops..... 3 pounds  
Bruised Jamaica ginger... 2 pounds  
Ground quillaia ..... 1 pound  
Ground licorice ..... 1 pound  
Wormwood ..... 4 ounces  
Boiling water.....116 gallons

Put the solids in a 120-gallon mash tun provided with a false bottom and tap beneath it. Pour on the boiling water and allow to rest for eight hours. Then allow the liquor to run into a fermenting vat containing—

Beat cane sugar..... 80 pounds  
Caramel ..... 1 pound  
Aurantine coloring..... 1 ounce

Stir well until the sugar is dissolved and make up to 120 gallons with water. When the temperature of the liquor is 70° F., add 3 pounds of brewers' barm, mixed with 2 gallons of a previous brewing. Mix well, ferment for twenty-four hours and then skim off.

To clarify the ale, put 4 ounces of fine cut isinglass into a quart jar and fill it to three-fourths with boiling water. When dissolved thin the isinglass jelly with 6 gallons of liquor from the vat, then put it into the vat, mix well and set aside for twelve hours to clarify. Draw off into hogsheads, putting into each a handful of hops and bung up.

In a few days the ale is ready to bottle. Only clean and dry bottles should be used, and the corks must be dipped in the ale before insertion.

**Hop Beer.**

Sassafras ..... 2 ounces  
Yellow dock..... 2 ounces  
Allspice ..... 2 ounces  
Wintergreen ..... 2 ounces  
Wild cherry..... 1 ounce  
Coriander ..... 1 ounce  
Hops ..... 1 ounce  
Alcohol ..... 6 pints  
Water,

Sugar, of each, a sufficiency.

Reduce the drugs to powder and percolate with a mixture of the alcohol and 10 pints of water. Add 1 pint of yeast and enough water to make the whole measure 12 gallons. Add sugar to suit. Let stand in a warm place to ferment.

**Hop Beer.**

Hops ..... 10 ounces  
Water ..... 16 gallons  
Sugar ..... 5 pounds  
Yeast ..... 4 to 6 ounces

Boil the hops in part of the water for 1 hour, add enough water to make 16 gallons, then add the yeast and sugar. Stir till dissolved, strain and let stand 3 or 4 days to ferment.

**Lemon Beer.**

Sliced lemon peel.....	1 ounce
Ginger .....	1 ounce
Sugar .....	1 pound
Yeast .....	1 teacupful
Water .....	1 gallon

Boil the lemon and ginger in the water, add the sugar and yeast, stir till dissolved, then strain and let stand for a day or two.

**Lemon Beer.**

Mix in a keg 1 gallon of water, 1 sliced lemon, 1 tablespoonful crushed ginger, 1 pint syrup, and  $\frac{1}{2}$  pint of yeast. The "beer" is ready to use in 24 hours.

**Orange Beer.**

Prepare in the same way as for lemon beer, using orange peel in place of lemon peel.

**Maple Beer.**

Maple syrup.....	$\frac{1}{2}$ gallon
Essence of spruce.....	1 ounce
Yeast .....	1 to 2 pints
Boiling water.....	8 gallons

Proceed as with "Lemon Beer."

**Molasses Beer.**

Molasses .....	18 pounds
Hops .....	6 ounces
Yeast .....	1 pint
Water, to fill a cask.....	50 gallons

Proceed as for "Hop Beer."

**Ottawa Beer.**

Sassafras .....	2 ounces
Allspice .....	2 ounces
Yellow dock.....	2 ounces
Wintergreen .....	2 ounces
Wild cherry.....	1 ounce
Coriander .....	1 ounce
Hops .....	1 ounce
Molasses .....	$\frac{1}{2}$ gallons
Water, enough to make...	25 gallons
Brewers' yeast.....	1 pint

Boil the drugs in part of the water, decant and boil again with more water, continuing the operation till exhausted. Mix all of the infusions, add the molasses, yeast and enough water to make 25 gallons. Put into a cask and allow to ferment.

**Root Beer.**

Sassafras .....	$\frac{1}{2}$ pound
Wintergreen .....	$\frac{1}{2}$ pound
Sarsaparilla .....	$\frac{1}{2}$ pound
Molasses .....	3 gallons
Yeast .....	1 pint
Water, enough to make...	50 gallons

Proceed as directed for making "Ottawa Beer."

**Root Beer.**

Sassafras .....	$\frac{1}{2}$ pound
Wild cherry.....	$\frac{1}{2}$ pound
Allspice .....	$\frac{1}{2}$ pound
Wintergreen .....	2 ounces
Hops .....	2 ounces
Coriander .....	2 ounces
Molasses .....	6 gallons
Yeast .....	2 pints
Water, enough to make...	50 gallons

Proceed as directed for "Ottawa Beer."

**Sarsaparilla Beer.**

Sarsaparilla .....	$\frac{1}{2}$ ounce
Sassafras .....	$\frac{1}{4}$ ounce
Honey .....	34 pounds
Sugar .....	1 pound
Yeast .....	4 ounces
Boiling water.....	1 gallon

Proceed as directed for "Ottawa Beer."

**Spruce Beer.**

Hops .....	2 ounces
Sassafras .....	2 ounces
Essence of spruce .....	1 ounce
Essence of ginger .....	1 ounce
Ground pimenta.....	$\frac{1}{2}$ ounce
Brown sugar.....	7 pounds
Yeast .....	$\frac{1}{2}$ pints
Water .....	1 gallon

Proceed as directed for "Birch" or "Hop Beer."

**Spruce Beer.**

Sugar .....	2 pounds
Essence of spruce.....	1 ounce
Boiling water.....	2 gallons

Mix well and when nearly cool, add a wine-glass of yeast. Bottle the next day.

**Preservation of Cider.**

When the saccharine matters, by fermentation, are being converted into alcohol, if a bent tube be inserted air tight into the bung, with the other end into a pail of water, to allow the carbonic acid gas evolved to pass off without admitting any air to the barrel, a beverage will be obtained that is all that can be desired. A handy way is to fill the cask nearly up to the wooden faucet, when the cask is rolled so the bung is down. Get a common rubber tube and slip through the end of the plug in the faucet, with the other end in a pail of water. Then turn the plug so the cider can have connection with the pail. After the gas ceases to bubble up through the water, bottle or store the cider away.

**Preservation of Sweet Cider.**

Dissolve in the cider one-tenth of one per cent of sodium benzoate. This is superior to sulphite of lime, and its use is permissible under the laws of most of the States.

**Anti-Ferment for Cider.**

Sulphite of lime; or equal parts of sulphite of lime and ground black mustard seed.

**Soluble Essence of Ginger Ale.**

A Belfast formula which has won renown for its excellent pungent qualities:

Bruised Jamaica ginger....	12 pounds
Bruised capsicum.....	2 pounds 3 ounces
Oil of lemon.....	36 ounces
Rectified spirit.....	6 gallons 40 ounces
Tincture of lemon.....	2 gallons
Essence of neroli.....	8 ounces
Water .....	3 or 4 gallons

Prepare a tincture of the solids with the spirit as follows: Place the capsicums at the bottom of a percolator and the ginger on top and add 2 gallons rectified spirit. Macerate forty-eight hours and run off; add other 2 gallons rectified spirit. Macerate forty-eight hours and run off into the first; repeat this with the other 2 gallons of spirit. Wash down the ginger and capsicums in the percolator with 1 gallon of hot water. Put the 6 gallons of tincture in a jar, dissolve the oil of lemon in the 40 ounces of rectified spirit and add to this; then finally the tincture of lemon and essence of neroli, and, lastly, water. Try the solubility after adding 3 gallons, and if not soluble enough increase it to 4 gallons. Shake all together and allow to clear, and it will be ready for drawing off. Then add a few drops of essential oil of almond to each gallon before filtering.

**Cider, to Preserve.**

Salicylic acid was formerly largely employed for this purpose, but its use is now quite generally prohibited. The proportion employed was about  $\frac{1}{2}$  ounces to 50 gallons.

Place the acid in some suitable container and pour upon it a sufficient quantity of cider and thoroughly mix before adding it to the contents of the barrel. If the acid be added directly to the cider in the barrel, it is very likely to float upon the top and not be dissolved. As the cider runs from the press, pass it through a hair sieve into a large open vessel. In a day or less the pomace will rise to the top, and in a short time become very thick. When little white bubbles break through it, draw off the cider through a spigot placed about three inches from the bottom. At this stage the acid may be added.

Another method, and one largely followed, is at this point to transfer the cider to clean, sweet casks, and when the bubbles again escape at the bung-hole, rack it again; repeat this a couple of times. Then fill up the cask with cider in every respect just like that originally contained in it, add a tumbler of warm sweet oil, and bung up tight. For very fine cider it is customary to add at this stage about  $\frac{1}{2}$  pound glucose, or a smaller portion of white sugar. The cask should then be allowed to remain in a cool place till the cider has acquired the desired flavor. In the meantime, clean barrels for its reception should be prepared as follows: Some clean strips of rags are dipped in melted sulphur, lighted and burned in the bung-hole, the sulphur vapor being retained in the barrel. Then tie  $\frac{1}{2}$  pound mustard seed in a coarse muslin bag, and put it in the barrel, fill the barrel with cider, and add about  $\frac{1}{4}$  pound isinglass of fine gelatin dissolved in hot water. This is an old-fashioned but very satisfactory method.

Calcium sulphite has been employed by some manufacturers instead of mustard and sulphur,  $\frac{1}{8}$  to  $\frac{1}{4}$  ounce to each gallon of cider being dissolved in a little cider and poured into the barrel, which should then be thoroughly shaken or rolled. Such addition, is not authorized under existing food laws, however.

#### **Essence of Dry Ginger Ale.**

Essence of Jamaica ginger (soluble) .....	40 ounces
Essence of vanilla .....	8 ounces
Essence of capsicum .....	4 ounces
Essence of nutmeg .....	80 minims
Essence of cinnamon .....	$\frac{1}{2}$ dram
Oil of cognac .....	24 minims

Mix and filter.

Two ounces of this to a gallon of syrup.

#### **Champagne Cider.**

Good pale cider .....	100 gallons
Alcohol .....	3 gallons
Sugar (or honey) .....	24 pounds

Mix them. In the case of the sugar, dissolve this in a part of the cider, and add this to the remainder. Let the mixture stand during 2 weeks in a moderately cool place, but watch it carefully, as it should not ferment before it is bottled. Finally, take out a few gallons, mix them intimately with a few gallons of skimmed milk, and incorporate the mixture thoroughly with the contents of the cask, which will thereby be clarified. Lastly, bottle the clear liquid, and secure the corks. Keep the bottles in a moderately cool place, on their sides, or standing upside down.

#### **Champagne Cider.**

Pineapple cider .....	20 gallons
Alcohol .....	1 gallon
Sugar .....	6 pounds

Put into a cask; before fermentation begins add 1 gallon skimmed milk. After a few days, bottle.

#### **Cheap Cider (Imitation).**

Cold water .....	10 gallons
Brown sugar .....	$7\frac{1}{2}$ pounds
Tartaric acid .....	$\frac{1}{4}$ pound

Juice of 2 or 3 pounds of sour apples.  
Mix and allow to ferment.

#### **Orange Cider.**

Sugar .....	8 pounds
Water .....	3 gallons
Oranges .....	20

Dissolve the sugar in the water at a gentle heat, express the oranges and cut the rind in small pieces, add all to the syrup; put in a cask, stir frequently for 4 days, close and set aside in a cool cellar. Draw after 4 weeks.

#### **To Keep Cider Sweet.**

Add  $\frac{1}{2}$  pound grated horseradish to a barrel of cider, when the required flavor has been reached.

#### **Quince Cider.**

This is made in the same manner as orange cider, taking quinces in place of oranges.

#### **Anise Cordial.**

Oil of anise .....	$1\frac{1}{2}$ drams
Alcohol .....	2 ounces
Talcum .....	$\frac{1}{2}$ ounce
Sugar .....	2 pounds
Water, enough to make ..	4 pints

Mix the oil and the alcohol in a large mortar, stir in the talcum and  $\frac{1}{2}$  pound of sugar, add the water slowly, stirring constantly and finally add the remainder of the sugar. When dissolved, filter.

#### **Cinnamon Cordial.**

Prepare like "Anise Cordial," taking oil of cinnamon and adding 2 drams of caramel before filtering.

#### **Clove Cordial.**

Prepare like "Cinnamon Cordial."

#### **Peppermint Cordial.**

Prepare like "Anise Cordial," taking 4 pounds of sugar and coloring with chlorophyll.

#### **Ginger Cordial.**

Soluble essence of ginger ..	2 ounces
Tincture of capsicum .....	1 dram
Essence of cloves .....	1 dram
Essence of cinnamon .....	2 drams
Caramel .....	2 drams
Syrup .....	5 pints
Water, enough to make ..	1 gallon

Mix and filter through powdered talc.

#### **Malted Milk.**

To a pint of milk add one tablespoonful of malt, boil for  $\frac{1}{2}$  hour. The milk is now peptonized and acceptable to the most delicate stomach.

#### **Malted Milk Powder.**

Malted milk prepared as above can easily be brought to a powder by evaporating at a low temperature in vacuo. It should then be mixed with an equal weight of sugar of milk.

#### **Malted Milk Tablets.**

Malted milk powder, as prepared by the preceding formula, can easily be granulated with alcohol and pressed into tablets weighing about 60 grains each, the tablets being either "plain" or combined with chocolate.



**Lemon Juice Cordial.**

Glucose .....	36 pounds
Cane sugar.....	108 pounds
Water .....	28 gallons
Lime juice.....	17 gallons
Oil of orange .....	4 drams
Oil of nutmeg .....	4 drams
Benzoic acid.....	2 ounces

Dissolve the glucose and cane sugar in the water, add to the solution the lime juice, the essential oils and the benzoic acid, mix well, and strain.

**Lime Juice Cordial.**

Boric acid.....	2 drams
Citric acid.....	2 ounces
Sugar .....	3 pounds
Water .....	2 pints
Lime juice.....	2 pints
Essence of lemon.....	2 ounces
Caramel .....	1 dram
Water, enough to make...	1 gallon

Mix the first 4 ingredients by gentle heat, then add the remainder and filter.

**Lemon Squash.**

Sugar .....	2 pounds
Citric acid.....	1 ounce
Water .....	2 pints
Dissolve and add, previously mixed,	
Oil of lemon.....	$\frac{1}{2}$ dram
Essence of lemon.....	1 ounce
Tincture of turmeric.....	1 dram
Caramel .....	20 drops

Mix well and filter.

**Condensed Milk.**

The following description of the process used in making the different grades of condensed milk is taken from the Yearbook of the U. S. Department of Agriculture:

"Plain condensed milk" is made from whole milk, from part whole and part skimmed milk, and from skimmed milk. To get the desired density it is necessary to condense the whole milk 3 to 1 and the skimmed milk about 4 to 1. The milk to be condensed is put into hot wells and heated with steam to a temperature of 150° to 156°. It is then drawn into the vacuum pan and condensed, if whole milk, to 10° Baume, and if skimmed milk to 14° Baume. As soon as the desired density is reached the milk is then superheated by blowing steam into the milk in the vacuum pan until the milk becomes thick. The temperatures used in this process vary from 175° to 200°.

As soon as the milk is sufficiently thick the steam is shut off and water is run into the condenser to secure the proper consistency. The vacuum pump is then started slowly, and the vacuum drawn up to about 26 inches. The vacuum is then released, and the milk is drawn into 10-gallon cans and placed in the cooling tank and cooled to 36° or 38° F. by first cooling as cold as possible with water and then shutting off the flow of water to the cooling tank and turning the brine of ammonia through the coils in the side of the cooling tank.

Sugared milk to be put in cans is made from whole milk and is condensed 4 to 1 and 1 pound of sugar added to each 3 quarts of milk condensed. The milk is heated in the hot wells as hot as possible by steam blown into the milk through a heater head. It is then drawn into the vacuum pan and condensed. There are different methods used in adding the sugar to the milk. Some manufacturers have a separate tank, where the sugar is dissolved either in hot milk or hot distilled water, and the syrup so made drawn into the vacuum pan gradually with the fresh

milk; others draw nearly all the milk into the vacuum pan and dissolve the sugar in the hot wells in the milk left there for that purpose. It is then drawn into the vacuum pan after the milk is condensed.

Sugared condensed milk to be sold in bulk is made from part or all skimmed milk in the same way as the canned goods, except that 1 pound of sugar is added for each 4 quarts of skimmed milk to be condensed. This class of goods is used by bakers and confectioners, and is made with any desired per cent of butter fat from whole milk to full skimmed milk.

Evaporated milk is made from whole milk and is heated in the hot wells the same as for sugared condensed milk. This milk is condensed in the vacuum pan until it has the required percentage of solids and butter fat desired by the manufacturer. After the milk is condensed it is run over a pipe cooler and cooled to about 60° and is then put into small cans, and sealed. As soon as it is sealed it is put into the sterilizer and heated to about 240°. While in the sterilizer the milk is kept in motion, so that the contents of the cans will be heated through evenly. The time required depends upon the size of the cans and the condition of the milk, and varies from 18 to 45 minutes. As soon as the milk is sterilized it is immediately cooled in the sterilizer, and when cold it is removed from the sterilizer and shaken in a shaker until it is smooth.

**Kumyss.**

Fresh milk.....	12 ounces
Water .....	4 ounces
Brown sugar.....	$2\frac{1}{2}$ drams
Compressed yeast.....	24 grains
Milk sugar.....	3 drams

Dissolve the milk sugar in the water, add to the milk, rub the yeast and brown sugar down in a mortar with a little of the mixture, then strain into the other portion. Strong bottles are very essential, champagne bottles being frequently used, and the corks should fit very tightly; in fact, it is almost necessary to use a bottling machine for the purpose, and once the cork is properly fixed, it should be wired down. Many failures have resulted because the corks did not fit properly, the result being that the carbonic acid gas escaped as formed, and left a worthless preparation. It is further necessary to keep the preparation at a moderate temperature, and to ensure the article being properly finished, the bottles are to be gently shaken each day for about 10 minutes to prevent the clotting of casein. It is well to take the precaution of rolling a cloth around the bottle during the shaking process, as the amount of gas generated is great, and should the bottle be of thin glass or contain a flaw it may give way. Some few days elapse before the fermentation passes into the acid stage, and when this has taken place the preparation is much thicker. It is now in the proper condition to be used.

**Kumyss.**

Fill a quart champagne bottle up to the neck with pure milk; add 2 tablespoonfuls of white sugar, after dissolving the same in a little water over a hot fire; add also a quarter of a two-cent cake of compressed yeast. Then tie the cork in the bottle securely, and shake the mixture well; place it in a room of the temperature of 50° to 95° F., for 6 hours. Be sure the milk is pure; that the bottle is sound; that the yeast is fresh; to open the mixture in the morning with great care, on account of its effervescent properties; not to drink it at all if there is any curdle or thickening part resembling

cheese, as this indicates that the fermentation has been prolonged beyond the proper time.

### Kumyss.

Dilute the milk with 1/6 part of hot water, and, while still tepid, add 1/8 part of very sour (but otherwise good) buttermilk. Put it into a wide jug, cover with a clean cloth, and let it stand in a warm place (about 75° F.) for 24 hours; stir up well, and leave for another 24 hours. Then beat thoroughly together, and pour from jug to jug until perfectly smooth and creamy. It is now still kumyss, and may be drank at once. To make it sparkling, which is generally preferred, put it into champagne or soda water bottles; do not quite fill them, well secure the corks, and lay down in a cool cellar. It will then keep from 6 to 8 weeks, though it becomes increasingly acid. To mature some for drinking quickly, it is well to keep a bottle or two to start with in some warmer place, and from time to time shake vigorously. With this treatment it should, in about three days, become sufficiently effervescent to spurt freely through a champagne tap, which must be used for drawing it off as required. Later on, when very frothy and acid, it is more pleasant to drink if a little sweetened water (or milk and water) is first put into the glass. Shake the bottle, and hold it inverted well into the tumbler before turning the tap. Having made one lot of kumyss, it, instead of buttermilk, can be used as a ferment for the second lot, and so on five or six times in succession; after which it will be found advisable to begin again as at first.

### Kumyss.

Skimmed milk.....	8 pints
Water .....	2½ pints
Brewers' yeast.....	1 ounce
Granulated sugar.....	3 ounces
Milk sugar.....	5 ounces

Dissolve the sugar in 20 ounces of water and mix it with 75 ounces of the milk; add the yeast and set aside in a warm place for six hours. Dissolve the milk sugar in the rest of the water and add it with the rest of the milk to the brew. Mix, strain, and bottle, securing the corks well.

### Buttermilk as a Beverage.

As a beverage, the use of buttermilk is increasing, for already in large cities there is a good demand for it in hotels, at lunch counters and in bar rooms. It is also sold to some extent over the soda fountain counter, and in some foreign cities it is said to be replacing beer. An ordinary glass of buttermilk contains about as much nutriment as 2 ounces of bread, a good sized potato, or a half pint of oysters. The chemical composition of buttermilk varies more or less according to the composition of the milk from which it is made, but on the average it contains about the following percentages; Water, 91; protein, 3; fat, 0.5; carbohydrates, 4.8; ash, 0.7 per cent. It thus contains about the same food constituents as skim milk, but it has an added hygienic value because the protein is more easily digested than the protein in skim milk, and therefore is often prescribed by physicians for children and invalids, especially those suffering from intestinal trouble. The value of this product as a nutrient in cheap form is shown comparatively by stating that two and one-half quarts of skim milk or buttermilk contain about the same amount of protein as one pound of round steak, and cost about one-quarter as much. Two quarts of the milk have a greater nutrient value than one quart of oysters. The nutriment in the

form of oysters would cost 30 to 50 cents, while the skim milk or buttermilk would have a value on the farm of from 2 to 4 cents.

Buttermilk sherbet is made very much as are other sherbets, except that fresh, tart buttermilk is used in place of water, no lemons or other acid-bearing ingredients being required. Made in a small way, the following recipe has been found to give excellent results: Two quarts fresh, tart buttermilk; 1¼ pounds sugar; 1 large orange or 2 small ones; 3 teaspoonfuls gelatin. It is frozen in the same manner as is ice cream, save that no attempt is made to increase its volume materially. This sherbet is so rich in sugar that it will melt at a relatively low temperature, and consequently it will often be found slushy if held at the ordinary holding temperature for ice cream.

### Concentrated Fruit Syrups.

The so-called "concentrated fruit syrups" are nothing more than fruit juices or other flavors preserved in heavy syrup. The following is a general formula which is well adapted for the preparation of concentrated syrups of strawberry, raspberry, pineapple, etc.; Mash or crush the fruit, allow it to ferment at a temperature of from 15° to 20° C., until bright or until a small filtered portion mixes clear with half a volume of alcohol. Then strain and express; for every pint of juice add 1½ pounds of sugar, apply gentle heat until the latter is dissolved, stirring constantly meanwhile, then bring the whole up to a quick boil without stirring, skim off the scum of coagulated matter, if necessary, strain quickly, fill into stout bottles (champagne quarts) which have previously been heated in a water bath or else rinsed with alcohol, cork quickly, tie over with stout wire, seal when cool with sealing wax, and put the bottles away, laid on their sides, in a cool place. If the hot syrup be poured into cold bottles, possible breakage of the latter may be prevented by resting them on a towel wet with water from the hydrant.

When wanted for use, concentrated syrups should be thinned with water and diluted with syrup to make two to five times the bulk of the concentrated syrup. To the diluted syrup is then added sufficient quantity of solution of citric acid and soda foam. Concentrated syrups, as a rule, do not need added preservatives, the presence of so much sugar preventing decomposition.

### Russian Kwass.

Sweet bread kwass is made by steeping brown bread in water for several days, filtering off the liquid and allowing it to ferment, after adding sugar and yeast. Before being placed in the bottle the kwass is strained and raisins are added. In Helsingfors kwass is made by gently warming 4½ pounds of malt and water and gradually thinning it down with boiling water until four gallons of boiling water have been added. After allowing it to cool for 24 hours, the liquid is poured off from the sediment, treated with 1 pound of wheat flour, 1¼ pounds of sugar, and yeast, the whole being well stirred and bottled at the end of 12 hours. In some cases cereal flours or bread are used, either alone or in conjunction with malt. The chief point to remember is careful filtration, so as to keep as much yeast as possible out of the bottles, and waiting until fermentation has almost ceased before bottling to prevent risk of bursting the receptacles. Kwass is a brownish effervescent liquid, of low alcoholic strength, containing a small amount of acid and some sugar.

**Lemon Kwass.**

This variation of kwass is more popular in the South of Russia than the bread kwass, as it is more refreshing and more aromatic in character. It is prepared by putting lemon juice, sugar and raisins in water, the mixture being boiled to dissolve the sugar and extract the raisins. Yeast is then added. Cherries and some kinds of berries are sometimes used instead of lemons.

Kwass has from  $\frac{1}{2}$  per cent. to 2 per cent. alcohol, from .03 to .06 per cent. carbonic acid; from .006 to .082 per cent. acetic acid; and from .15 to .46 per cent. lactic acid.

**Bosa.**

Corn meal and millet, with or without the addition of some wheat flour and wheat bran, together with water and yeast, are allowed to ferment together. It is a rather turbid beverage, and is commonly sweetened with sugar or honey for drinking. It contains less than  $\frac{1}{2}$  of one per cent. alcohol as commonly prepared.

**Manufacture of Grape Juice.**

The manufacture of grape juice requires no great technical skill, the particular process depending somewhat upon the quantities one wishes to make. On a small scale or for home manufacture, the following method abstracted from a Government bulletin will probably satisfactorily answer the purpose.

Use only clean, sound, well-ripened but not overripe grapes. If an ordinary cider mill is at hand, it may be used for crushing and pressing, or the grapes may be crushed or pressed with the hands. If a light-colored juice is desired, put the crushed grapes in a cleanly washed cloth sack and tie up. Then either hang up securely and twist it or let two persons take hold, one on each end of the sack, and twist until the greater part of the juice is expressed. Then gradually heat the juice in a double boiler or a large stone jar in a pan of hot water, so that the juice does not come in direct contact with the fire, at a temperature of 180 to 200° F.; never above 200° F. It is best to use a thermometer, but if there be none at hand, heat the juice until it steams, but do not allow it to boil. Put it in a glass or an enameled vessel to settle for 24 hours; carefully drain the juice from the sediment, and run it through several thicknesses of clean flannel or a conic filter made of woolen cloth may be used. This filter fixed to a hoop of iron can be suspended wherever necessary. After this fill into clean bottles. Do not fill entirely, but leave room for the liquid to expand when again heated. Fit a thin board over the bottom of an ordinary wash boiler, set the filled bottles in it, fill in with water around the bottles to about an inch of the tops, and gradually heat until it is about to simmer. Then take the bottles out and cork or seal immediately. It is a good idea to take the further precaution of sealing the cork over with sealing wax or paraffin to prevent mold germs from entering through the cork.

Should it be desired to make a red juice, heat the crushed grapes to not above 200° F., strain through a clean cloth or drip bag (no pressure should be used), set away to cool and settle and proceed the same as with light colored juice. Any person familiar with the process of canning fruit can also preserve grape juice, for the principles involved are identical. One of the leading defects in unfermented juice is that much of it is not clear, a condition which very much detracts from its otherwise attractive appearance, and is mainly due to two causes—either the final sterilization in bottles has been at a higher

temperature than the preceding one, or the juice has not been properly filtered or has not been filtered at all. In other cases the juice has been sterilized at such a high temperature that it has a disagreeable scorched taste. Attempts to sterilize at a temperature above 195° F. are dangerous, so far as the flavor of the finished product is concerned. Another serious mistake is sometimes made by putting the juice into bottles so large that much of it becomes spoiled before it is used after the bottles are opened. Unfermented grape juice properly made and bottled will keep indefinitely, if it is not exposed to the atmosphere or mold germs; but when a bottle is once opened it should, like canned goods, be used as soon as possible, to keep it from spoiling. If the precautions named are observed, it will probably not be necessary to use an antiseptic like benzoate of soda as a preservative. Under the Federal Food and Drugs Act, the addition of one tenth of 1 per cent. of this substance is permissible, if the fact is so stated on the label.

**Grape Juice.**

Select good sound ripe grapes. Crush them and express the juice. Heat to about 200° F., do not boil. Set aside for 24 hours, draw off the clear juice, fill in bottles, cork tightly and heat in a pasteurizing apparatus. Grape juice thus prepared will keep for a long time.

**Grape Juice.**

Grape juice may also be freed of the ferment germ by rotating it in a centrifugal apparatus. Special machinery is necessary for this purpose.

**Fruit Juices.**

The juice of other succulent fruits can be preserved in a similar method to that employed for grape juice; as currants, strawberries, apples, oranges, etc.

**Raisin Wine (Base Wine).**

Dried raisins.....	70 pounds
Sugar .....	100 pounds
Honey .....	1 pound
Cream of tartar.....	12 ounces
Boiling water, enough to make about.....	55 gallons (1 cask.)

Dissolve the sugar and honey in 10 gallons of water and put into the cask. Crush the raisins, and macerate with enough boiling water to cover them. Express and put the infusion into the cask. Treat the raisins again with boiling water and continue till the cask is nearly full. Stir well and add the cream of tartar. Set aside for fermentation and when fermentation ceases put into bottles.

**Orange Wine.**

Prepare as in the preceding formula, taking sliced and expressed oranges, and substituting them for half the raisins.

**Elderberry Wine.**

Prepare as directed for raisin wine, adding 3 or 4 gallons of elderberry juice to the wine before fermentation.

**Elder Wine.**

Take 5 pounds of ripe berries, free from stalks, bruise them, pour over them 1 gallon of soft or distilled water, and macerate for 2 days, with frequent stirring. Draw off the liquid and press out the juice from the magma in hair bags. Add to the liquid 4 pounds of sugar and  $\frac{1}{4}$  ounces of cream of tartar, the latter dissolved in water. Keep in a rather



warm place, stir well and set aside to ferment for 3 or 4 days, skimming and well stirring up occasionally. Then fill into casks, leaving the bung hole open. After a week, turn into other casks, and add  $\frac{1}{2}$  ounce brandy to the pint of wine, quite fill the casks and bung down. In 3 or 4 weeks the wine ought to be clear, but if it is not, finings must be added.

#### Elder Wine.

Alcohol, 90 per cent.....	12 $\frac{1}{2}$ gallons
Water .....	12 $\frac{1}{2}$ gallons
Elderberries (juice).....	6 $\frac{1}{2}$ gallons
Loaf sugar.....	18 $\frac{3}{4}$ pounds
Port wine.....	2 $\frac{1}{2}$ gallons
Orange flower water.....	$\frac{5}{8}$ pint

Mix, allow to stand 1 week, then draw off.

#### Unfermented Orange Wine.

Citric acid.....	1 ounce
Potassium carbonate.....	1 dram
Sugar or honey.....	to taste
Infusion of orange peel....	4 ounces
(more or less.)	
Alcohol .....	1 $\frac{1}{2}$ ounces
Essence of cloves.....	5 drops
Water, enough to make....	1 quart

Filter and clarify, and allow to stand at least 1 month before using, by which time all the ingredients will be thoroughly incorporated and blended.

#### Ginger Wine.

Add 6 pounds of crushed Jamaica ginger and the rind of 15 lemons to the formula for "Raisin Wine", otherwise completing the manufacture as directed.

#### Ginger Wine Essence.

Tincture of ginger.....	4 drams
Tincture of capsicum.....	3 drams
Tartaric acid.....	6 drams
Caramel .....	2 ounces
Water, enough to make....	4 ounces

Mix. If a clear essence is desired, filter through powdered talc, adding enough water through the filter, to make 4 ounces. This quantity of essence is sufficient to make 1 gallon of wine by mixing with water, adding sugar and a little alcohol, as desired.

#### Ginger Wine Essence.

Gingerin .....	20 grains
Capsicum .....	6 grains
Alcohol .....	2 drams
Glycerin .....	1 $\frac{1}{2}$ ounces
Caramel .....	2 ounces
Tartaric acid.....	$\frac{1}{2}$ ounce
Syrup .....	3 ounces
Orange flower water, enough to make.....	10 ounces

Mix and use as directed in the preceding formula.

#### Ginger Wine Essence.

Gingerin .....	36 grains
Capsicum .....	2 grains
Alcohol .....	4 ounces
Water .....	4 ounces
Tartaric acid.....	8 ounces
Caramel .....	1 pint
Water .....	8 ounces

Mix as above directed. Use 4 to 6 ounces to a gallon of finished product.

#### Ginger Wine Essence.

Gingerin .....	3 drams
Capsicum .....	1 dram
Glycerin .....	8 ounces
Syrup .....	8 ounces
Caramel .....	4 ounces
Tartaric acid.....	6 ounces
Water, enough to make....	4 pints

Mix as directed in a preceding formula. Use 4 ounces to 1 gallon of water and sugar.

#### Ginger Wine Essence.

Soluble essence of ginger..	3 ounces
Soluble essence of capsicum	2 ounces
Soluble essence of lemon..	1 ounce
Citric acid.....	1 pound
Caramel .....	1 pound
Chloroform water, enough to make.....	6 pints

Mix. To make the wine use from 4 to 6 ounces of the ginger wine essence to a gallon of sweetened water.

#### Currant Wine Essence.

Currant essence.....	8 ounces
Vanillin .....	4 grains
Gingerin .....	5 grains
Tartaric acid.....	2 $\frac{1}{2}$ ounces
Caramel .....	2 ounces
Salicylic acid.....	10 grains
Water .....	3 ounces
Syrup, enough to make....	1 pint

Mix as directed in the first formula given above for "Ginger Wine Essence". Use 4 to 8 ounces to a gallon of sweetened water.

#### Cherry Wine Essence.

Prepare as directed in the preceding formula, using in place of the currant essence:

Essence of cherry.....	8 ounces
Essence of almond.....	2 drams

Mix, then add

Liquid cochineal.....	1 ounce
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#### Raspberry Wine Essence.

Essence of raspberry.....	1 ounce
Tincture of capsicum.....	1 dram
Liquid cochineal.....	3 drams
Diluted acetic acid, enough to make .....	4 ounces

Mix. For 1 gallon of water and sugar.

#### Strawberry Wine Essence.

Follow the formula for raspberry wine essence, using less coloring matter.

#### Fruit Wine Essence.

The currant essence is a good formula for any other fruit wine, arranging the coloring matter to simulate the color of the fruit desired.

## BAKING POWDERS.

#### Baking Powder.

Cream of tartar.....	8 ozs. 6 ozs.
Baking soda.....	4 ozs. 3 ozs.
Cornstarch .....	4 ozs. 1 oz

Mix.

#### Baking Powder.

Cream of tartar.....	3 pounds
Sodium bicarbonate.....	1 lb. 6 $\frac{1}{2}$ ozs.
Best roller flour.....	1 pound
Cornstarch .....	$\frac{1}{2}$ pound

Mix.

#### Baking Powder.

Potassium bitartrate (pure)	19 parts
Tartaric acid.....	8 parts
Ammonium carbonate (bicarbonate) .....	1 part
Sodium bicarbonate.....	17 parts
Starch .....	7 parts

Mix.

**Baking Powder, Ammonia.**

Ammonium carbonate, crystalline .....	6 ounces
Tartaric acid.....	$\frac{1}{2}$ pound
Alum .....	1 pound
Sodium bicarbonate.....	$1\frac{1}{2}$ pounds
Starch (or flour or potato farina) .....	2 pounds

The ingredients must be pulverized and sifted separately, dried at a very low temperature, mixed in a perfectly dry room, and immediately packed with great pressure into receptacles and sealed air-tight, to prevent as nearly as possible loss of ammonia.

**Baking Powder, Alum.**

Tartaric acid.....	4 parts
Alum .....	8 parts
Sodium bicarbonate.....	12 parts
Potato or corn starch.....	16 parts
Ammonium carbonate.....	3 parts

Pulverize separately and sift; dry thoroughly with a low degree of heat. Mix in a dry room, and at once pack into forms, taking care to pack hard. Cover at once with tin foil or paraffin paper, to preserve as far as possible from the effects of moisture. Cornstarch farina may be used in place of potato starch.

**Baking Powder.**

Sodium chloride.....	13 ounces
Sodium bicarbonate.....	10 ounces
Cream of tartar.....	9 ounces
White sugar.....	5 ounces
Cornstarch .....	4 ounces

Mix well.

**Baking Powder.**

Acid calcium phosphate...	2 pounds
Powdered dried alum.....	2 pounds
Sodium bicarbonate.....	3 pounds
Starch .....	3 pounds

Mix.

**Baking Powder.**

Cream of tartar.....	60 ounces
Sodium bicarbonate.....	28 ounces
Ammonium carbonate.....	1 ounce
Corn flour.....	16 ounces

Mix well and immediately securely pack.

**Baking Powder.**

Cream of tartar.....	2 pounds
Sodium bicarbonate.....	1 pound
Powdered rice.....	$1\frac{1}{2}$ pounds

Mix.

**Baking Powder.**

Tartaric acid.....	1 pound
Sodium bicarbonate.....	$1\frac{1}{4}$ pounds
Ground rice.....	2 pounds

Mix.

**Baking Powder.**

Tartaric acid.....	3 pounds
Sodium bicarbonate.....	3 pounds
Magnesium carbonate.....	$\frac{1}{2}$ pound
Rice flour.....	8 pounds

Mix.

**Baking Powder.**

Acid potassium sulphate...	3 pounds
Sodium bicarbonate.....	1 pound
Corn flour.....	1 pound

Mix.

**Baking Powder.**

Corn flour.....	4 pounds
Cream of tartar.....	$2\frac{1}{2}$ pounds
Sodium bicarbonate.....	$2\frac{1}{2}$ pounds
Calcium phosphate.....	1 pound

Mix.

**Baking Powder.**

Tartaric acid.....	3 ounces
Cream of tartar.....	1 pound
Sodium bicarbonate.....	1 pound
Wheat flour.....	2 pounds
Corn flour.....	8 ounces

Mix.

**Baking Powder.**

Calcium phosphate (acid)...	4 pounds
Sodium bicarbonate.....	$2\frac{1}{2}$ pounds
Rice flour.....	4 pounds

Mix.

**Baking Powder.**

Acid calcium phosphate...	2 pounds
Sodium bicarbonate.....	1 pound
Corn flour.....	1 pound

Mix.

**Baking Powder.**

Dried ammonium alum....	1 pound
Sodium bicarbonate.....	1 pound
Rice flour.....	2 pounds

Mix.

**Blancmange Powder.**

Corn flour.....	1 pound
Sago flour.....	1 pound
Oil of lemon.....	10 drops
Oil of nutmeg.....	5 drops
Oil of cassia.....	3 drops

Mix the oils with an ounce of the sago flour, gradually incorporate with the remainder of the sago flour and the corn flour, then sift twice.

**Custard Powder.**

Corn flour.....	1 pound
Powdered turmeric.....	1 dram
Oil of bitter almond.....	10 drops

Gradually incorporate the oil, mix well, and sift twice.

**Custard Powder.**

Corn flour.....	1 pound
Arrowroot .....	1 pound
Turmeric .....	2 drams
Oil of bitter almond .....	10 drops
Oil of nutmeg .....	3 drops

Mix well and sift.

**Egg Powder.**

Tartaric acid.....	1 pound
Sodium bicarbonate.....	$1\frac{1}{2}$ pounds
Rice flour.....	3 pounds
Tincture of saffron.....	2 to 4 drams

Mix and sift several times.

**Egg Powder.**

Tartaric acid.....	8 ounces
Cream of tartar.....	1 pound
Sodium bicarbonate.....	2 pounds
Rice flour.....	3 pounds
Saffron color.....	1 to 2 ounces

Mix and sift, several times.

**BUTTER COLORS.****Butter Color.**

In this country the addition of coloring matter to butter is specifically permitted under acts of Congress, approved August 2, 1886, and May 9, 1902. The following are typical formulas of preparations that have been recommended for coloring butter.

Anattoine .....	5 ounces
Turmeric (pulverized).....	6 ounces
Saffron .....	1 ounce
Lard oil.....	1 pint
Butter .....	5 pounds

The butter is first melted in a pan over a water bath and strained through a fine linen cloth. The saffron is made into a half-pint tincture, and, together with the turmeric and annattoine is gradually stirred into the hot butter and oil and boiled and stirred for about fifteen minutes. It is then strained through a cloth, as before, and stirred until cool.

#### Butter Color.

Annatto, of good quality..... 10 parts  
Caustic potassa..... 1½ parts  
Borax ..... 1 part  
Water ..... 100 parts  
Tincture of turmeric..... 20 parts

Mix and filter.

#### Butter Color (Mrs. Smith's).

Annatto seed, bruised.... 1 av. ounce  
Turmeric ..... 2 drams  
Ammonium carbonate..... 40 grains  
Cottonseed oil..... 7 av. ounces  
Lard oil..... 1 av. ounce

Mix and boil, stirring frequently, until the proper rich color has been attained; then strain and allow to settle. Only the best material should be used.

#### Butter Color (Rorick's).

The materials for 1,000 pounds butter are: Lard, butter or olive oil, 6 pounds; annatto, 6 ounces; turmeric, 1 ounce; salt, 10 ounces; nitre, 2-5 ounce; bromochloralum, 3½ ounces; water, quantity sufficient. The lard, butter or oil is heated on a water bath; the annatto and turmeric are then stirred into a thin paste with water and gradually added to the fatty matter, kept at a temperature of about 110° F. The salt and nitre are then stirred in and the mixture heated to boiling, and continue the heat a number of hours until the mass becomes dark enough. The bromochloralum is then added, the mass stirred until cool, and then put in sealed cans.

#### Butter Color.

Ethereal extract of annatto 1 dram  
Olive oil..... 1 gallon

Dissolve.

Instead of the ethereal extract a resin prepared as follows may be used: Exhaust annatto with warm spirit by double maceration; evaporate the liquors to dryness and extract the coloring resin from the residue with sodium carbonate solution (1 in 10); strain and precipitate the resin with dilute sulphuric acid, collect on a filter, wash it well with warm water and dry. The product is not so strong as the ethereal extract, and 1 to 2 drams of it must be used for a pint of oil.

It is said that colorings with turmeric, saffron and the like have gone out of favor, because they impart an unnatural taste to the butter.

#### Butter Color.

Best annatto..... 1 pound  
Potassium carbonate..... ½ pound  
Water ..... 1 gallon  
Borax ..... 2 ounces

Boil the annatto, potassium carbonate and water together, allow to cool, add the borax and strain. A teaspoonful to 10 gallons of milk for cheesemaking, and to 2 gallons of milk for butter making.

#### Butter Coloring.

Oil-soluble aniline orange. 1 ounce  
Olive oil..... 1 gallon

Dissolve by gentle heat.

#### Butter Coloring.

Ethereal extract of annatto 1 ounce  
Nut oil..... 1 gallon

Mix.

#### Butter Powder.

Sodium bicarbonate..... 4 pounds  
Sodium chloride..... 1 pound  
Aniline orange..... 10 grains

Triturate the aniline with a portion of the sodium chloride, add the remainder of the salt and the sodium bicarbonate, mix well and sift.

#### Butter Essence or Flavor.

Butyric ether..... 1 ounce  
Myristic acid..... 1 ounce  
Cumarin ..... 10 grains  
Glycerin, enough to make.. 8 ounces

Mix and dissolve.

#### Butter, to Preserve.

Powder finely and mix together 2 parts of the best salt, 1 part of loaf sugar, and 1 part of nitre. To each pound of butter, well cleansed from the milk, add 1 ounce of this compound. It should not be used under a month. (Butter that has an unpleasant flavor is said to be improved by the addition of 2½ drams of sodium bicarbonate to 3 pounds of butter. A turnipy flavor may be prevented by not feeding the cows with turnips except directly after milking them.)

#### Butter, to Restore Rancid.

Melt the butter at a low temperature with powdered animal charcoal and prepared chalk, stirring well. Allow to settle and pour off the melted butter.

#### Butter, to Restore the Taste.

If the flavor of the butter has been affected, churn with milk and add a little butter essence.

#### Butter, To Improve the Taste.

To each pound of butter add ¼ to 1 ounce of the "Butter Powder" (see formula given above), and mix well.

## CATSUPS. CHUTNEYS, RELISHES.

#### Cucumber Catsup.

Peel ripe cucumbers, crush and pass through a sieve to free them of the seeds. To each 3 pints of the pulp so obtained, add 2 ounces salt, ½ ounce white pepper, and 1 pint vinegar. Macerate for 2 weeks, stir occasionally and strain.

#### Anchovy Catsup.

Good ale..... 1 quart  
Anchovies ..... ¼ pound  
Large onion, chopped fine, ½ ounce  
Sugar ..... 1 dram  
Ground ginger..... 1 dram  
Ground mace..... 1 dram  
Ground cloves..... ½ dram

Mix together and simmer over a slow fire for 1 hour, then strain.

#### Horseradish Catsup.

Macerate 1 pound of grated horseradish in 2 pounds of vinegar for a month and strain.



**Mushroom Catsup.**

Mushroom juice.....	2 gallons
Pimenta .....	2 ounces
Cloves .....	1 ounce
Black pepper.....	1 ounce
Mustard seed.....	1 ounce
Ginger .....	1 ounce
Salt .....	1 pound
Shallots .....	2 ounces

Bruise all the spices; gently simmer them for one hour with the juice in a covered vessel, and when cold, strain, and bottle the liquor.

**Tomato Catsup.**

Ripe tomatoes, not peeled	½ bushel
Vinegar .....	1 quart
Salt .....	1 pound
Black pepper.....	¼ pound
Red pepper.....	12 pods
Allspice .....	¼ pound
Cloves .....	1 ounce
Good mustard.....	3 boxes
Garlic, sufficient.	
Onions .....	6
Brown sugar.....	2 pounds
Peach leaves.....	1 handful

Mix and boil until of the right consistency, being careful not to let the mixture burn; when cool enough, strain through a wire sieve. The ingredients are all put in together and thoroughly cooked. When done the catsup will be quite thick.

**Walnut Catsup.**

Juice of young English walnuts .....	1 gallon
Anchovies .....	2 pounds
Shallots .....	1 pound
Cloves, powdered.....	1 ounce
Mace .....	1 ounce
Garlic .....	1 ounce

Boil the juice for about ten minutes, and skim it; then add the anchovies, shallots, spices, and the garlic, sliced. Simmer the whole in a covered vessel for about fifteen minutes, strain it, and, when cold, pour it into bottles, adding to each bottle a little fresh spice and salt according to taste.

**Soy (Imitation).**

Syrup .....	½ gallon
Extract of malt.....	4 pounds
Molasses .....	4 pounds
Salt .....	4 pounds
Mushroom juice.....	2 pints

Heat gently, set aside for 2 weeks and decant.

**Lemon Pickles.**

Cut unpeeled lemons into quarters, sprinkle with salt, set aside for a week. Pack in jars with 2 cayenne pods to each lemon, add a sprinkling of turmeric and cover with hot vinegar.

**Pickling Mixture.**

Salt .....	3 pounds
Brown sugar.....	1 pound
Saltpetre .....	4 ounces
Water .....	2 gallons

Mix, boil for ½ hour and strain.

**Chutney, English.**

Sour apples.....	3 dozen
Brown sugar.....	3 pounds
Salt .....	½ pound
Raisins .....	2 pounds
Green ginger.....	½ pound
Small onions.....	6 ounces
Mustard seed.....	2 ounces
Malt vinegar.....	3 quarts

Cut the apples, ginger, onions, etc., in small pieces, add the vinegar, bring to a boil, strain through a coarse sieve and bottle.

**Walnut Pickles.**

Put fresh ripe walnuts, freed from the husks in strong brine for a week. Dry in the air, pack in jars and cover with boiling pickling vinegar.

**Tomato Chow-Chow.**

Large tomatoes.....	6
Large onion.....	1
Green capsicum.....	1
Brown sugar.....	2 ounces
Salt .....	1 ounce
Vinegar .....	½ pint

Chop the onion, blanch the tomatoes and cut in fine slices. Put the tomatoes and onion in a porcelain-lined kettle, add the other articles and cook in a slow oven till the onion is quite tender.

**Ordinary Mustard.**

Stir gradually 1 pint of good white wine into 8 ounces of ground mustard seed, add a pinch of pulverized cloves, and let the whole boil over a moderate fire. Then add a small lump of white sugar, and let the mixture boil up once more.

**French Mustard.**

Fresh parsley .....	2 ounces
Fresh chervil .....	2 ounces
Fresh chives .....	2 ounces
Fresh tarragon .....	1 ounce
Fresh garlic.....	1 ounce
Fresh thyme.....	1 ounce
Powdered cloves.....	4 drams
Salt .....	8 ounces
Olive oil.....	4 ounces
Distilled vinegar.....	8 pints

Cut the herbs and macerate 14 days in the vinegar; press the liquor out and add a sufficient quantity of mustard flour and the other ingredients, with enough water to make 12 quarts of prepared mustard.

**Mustard.**

Yellow mustard flour, pure	8 ounces
Vinegar .....	1 pint
Salt .....	½ ounce
Powdered sugar.....	1 ounce

Mix all well together, put in a porcelain-lined kettle and bring to a boil, stirring constantly. Put at once into small bottles well corked.

**French Mustard.**

Salt .....	1½ pounds
Horseradish, grated.....	1 pound
Garlic, grated.....	2 ounces
Cloves, powdered.....	1 ounce
Boiling vinegar.....	2 gallons

Macerate for 24 hours and strain. To one pint of this vinegar add 8 ounces of mustard flour and 2 ounces of sugar. Mix and bring to a boil.

**Royal Relish.**

Garlic (peeled and sliced) 3½	drams
Tincture of capsicum.....	2 drams
Indian soy.....	16 ounces
Tomato sauce.....	32 ounces
Walnut ketchup.....	32 ounces
Pickling vinegar.....	13 ounces

Mix. Macerate for a month, and strain.

**Chop Relish.**

Black pepper.....	1 ounce
Allspice .....	4 drams
Salt .....	1 ounce
Horseradish .....	4 drams
Onions, small.....	4 drams
Walnut catsup.....	1½ pints

Mix, steep for 2 days and strain.

**Favorite Relish (for Roast Pork or Goose).**

Green sage leaves.....	2 ounces
Fresh lemon peel.....	1 ounce
Salt .....	1 ounce
Minced onions.....	1 ounce
Powdered capsicum.....	½ dram
Citric acid.....	½ dram
Claret wine.....	1 pint

Mix, macerate 2 weeks and strain.

**London Relish.**

Anchovies (mashed).....	8 ounces
Fresh lemon peel.....	2 ounces
Minced onions.....	2 ounces
Grated horseradish.....	2 ounces
Bruised pimenta .....	1 ounce
Bruised black pepper.....	1 ounce
Celery seed.....	2 drams
Capsicum, powdered.....	2 drams
Walnut pickles.....	1 pint
Mushroom catsup.....	2 pints

Mix, macerate for a month and strain.

**Salad Dressing.**

Malt vinegar.....	6 ounces
Salad oil.....	4 ounces
Mustard .....	½ ounce
Salt .....	¼ ounce
Isinglass .....	1 dram
Tincture of capsicum.....	½ dram
Yolks of 2 eggs.	

Soak the isinglass in half the vinegar, emulsify the oil with the egg yolks and the remainder of the vinegar; add the isinglass solution and the remainder of the ingredients.

**Salad Dressing.**

Yolks of 4 eggs,	
Mustard .....	½ ounce
Olive oil.....	4 ounces
Vinegar .....	4 ounces
Salt .....	1 dram
Water .....	4 ounces

Mix the yolks and olive oil with the mustard, and gradually incorporate the other in-

**Salad Dressing.**

Yolks of 3 eggs,	
Salad oil.....	2 ounces
Mushroom catsup.....	1 ounce
Vinegar .....	1 ounce
Mustard .....	½ ounce
Salt .....	1 dram
Pepper .....	½ dram

Prepare as directed in the preceding formula.

**Salad Dressing.**

Salt .....	2 drams
Sugar .....	1 ounce
Olive oil.....	2 ounces
Yolks of 2 eggs,	

Make an emulsion and add:

Tincture of capsicum.....	20 drops
Mustard .....	1 ounce
Vinegar .....	6 ounces

Mix.

**Mayonnaise Salad Dressing.**

Yolks of 3 eggs,	
Syrup .....	1 ounce
Pepper .....	½ dram
Salt .....	3 drams
Mustard .....	1 ounce
Condensed milk.....	6 ounces
Olive oil.....	1 pint
Vinegar .....	10 ounces

Make an emulsion of the eggs, salt, pepper, mustard and oil, add the milk, and then incorporate the other ingredients.

**Brighton Sauce.**

Garlic .....	4 ounces
Cayenne pepper.....	1½ ounces
Mustard .....	3 ounces
Common salt.....	3 ounces
Indian soy.....	24 ounces
Mushroom ketchup.....	24 ounces
Acetic acid.....	1½ pints
Water .....	10½ pints

Slice the garlic, and bruise it with the salt; add to the other ingredients, digest in a warm place for a week. Strain, and bottle for use.

**Browning Sauce.**

English soy.....	1 pound
Walnut catsup.....	3 ounces
Mushroom catsup.....	3 ounces
Water .....	32 ounces

Mix well and bottle.

**Chutnee Sauce.**

Gooseberries .....	2 quarts
Vinegar .....	2 quarts
Salt .....	1 pound
Mustard seed.....	1 pound
Stoned raisins.....	1 pound
Brown sugar.....	1 pound
Garlic .....	12 ounces
Cayenne pepper.....	6 ounces

Make a syrup of the sugar with a pint of vinegar, boil the gooseberries with a quart of the vinegar; bruise the mustard seed and the garlic, and well incorporate the whole of the ingredients in a mortar.

**Chutnee Sauce.**

Stoned raisins.....	4 ounces
Crabapples.....	8 ounces
Brown sugar.....	4 ounces
Powdered ginger.....	2 ounces
Salt .....	2 ounces
Cayenne pepper.....	2 ounces
Garlic .....	1 ounce
Vinegar, a sufficiency.	

Pound the solids in a mortar to a pulpy mass, then add enough vinegar to bring to the consistence of cream.

**Cold Meat Sauce.**

Soy .....	5 ounces
Chili vinegar.....	10 ounces
Walnut catsup.....	10 ounces
Mushroom catsup.....	1 pint

Mix.

**Cucumber Sauce.**

Peel and slice 3 large cucumbers and 1 onion and sprinkle a handful of salt over them. Next morning bring to a boil, allow to simmer for ½ hour and strain. Add:

Mace, bruised.....	½ dram
Nutmeg, bruised.....	1 dram
Black pepper, bruised....	½ ounce
White wine.....	10 ounces
Vinegar .....	1 pint

Mix, bring to a boil and strain.

**Epicurean Sauce.**

Anchovies .....	16 ounces
Shallots (peeled and sliced) .....	4 ounces
Horseradish (sliced).....	2 ounces
Pimenta (bruised).....	2 ounces
Black pepper (bruised)...	2 ounces
Curry powder.....	1 ounce
Cayenne pepper.....	1 ounce
Garlic (peeled and sliced)	6 drams
Celery seed (bruised)....	½ ounce
Essence of lemon.....	1½ drams
Brown vinegar.....	8 ounces
Indian soy.....	16 ounces
Port wine.....	3 pints
Walnut ketchup.....	3 pints
Mushroom ketchup.....	5 pints

Mix and gently boil all the ingredients, except the vinegar, for an hour; strain, add the vinegar and bottle.

#### Harvey Sauce.

Anchovies .....	8 ounces
Lemon peel .....	1 ounce
Onions .....	1 ounce
Pimenta .....	1 ounce
Horseradish .....	1 ounce
Walnut pickle .....	1 pint
Mushroom catsup .....	1 pint

Mix, macerate for a month and strain.

#### Oyez Sauce.

Garlic .....	7 ounces
Onions .....	7 ounces
Capsicum .....	4 ounces
Mace .....	2 ounces
Cloves .....	2 ounces
Soy .....	2 gallons
Vinegar .....	6 gallons

Mix. Boil the bruised solids in the liquids for 15 minutes and strain.

#### Sauce L'Empereur.

Cloves .....	1 dram
Mace .....	1 dram
Pimenta .....	1 dram
Anchovies .....	16 ounces
Walnut juice .....	16 ounces

Boil, and add:

Shallots .....	2
Indian soy .....	5 ounces
Port wine .....	10 ounces
Vinegar .....	1 pint

Mix. Boil and simmer for 20 minutes, and strain.

#### Herefordshire Sauce.

Cayenne pepper .....	1 ounce
Shallots (sliced) .....	2 ounces
Walnut pickle .....	1 pint
Indian soy .....	1½ pints
Mushroom ketchup .....	4 pints
Vinegar .....	1 gallon

Mix, macerate for a month, and strain.

#### Sauce Piquant.

Horseradish .....	1 ounce
Salt .....	4 ounces
Mustard .....	2 drams
Shallots .....	½ ounce
Celery seed .....	½ dram
Cayenne .....	½ dram
Tarragon vinegar .....	1 pint

Bruise the solids, and macerate in the vinegar 14 days; then strain.

#### Sauce Superlative.

Port wine and mushroom ketchup, of each 1 quart; walnut pickle, 1 pint; pounded anchovies, ½ pound; lemon peel, minced shallots and scraped horseradish, of each 2 ounces; allspice and black pepper, bruised, of each 1 ounce; cayenne pepper and bruised celery seed, of each ¼ ounce (or curry powder, ¼ ounce); digest 14 days; strain and bottle.

#### Tomato Sauce.

Digest 1 gallon of bruised tomatoes with ½ pound salt for 3 days. Press out the juice and add to each quart 2 ounces of bruised shallots and 1 dram of black pepper. Let the whole simmer for half an hour, strain, and add ¼ ounce each of mace, pimenta, ginger, nutmegs and cochineal. Warm again and simmer for 10 minutes; strain, and bottle a few days later.

#### Tomato Sauce.

Ripe tomatoes .....	3 dozens
Chili vinegar .....	1 pint
Garlic .....	1 ounce
Shallots .....	1 ounce
Common salt .....	2 ounces
Cayenne pepper .....	½ dram
Lemon juice .....	5 ounces

Prepare in the same way as directed in the preceding formula.

#### Sauce Superlative.

Claret .....	20 ounces
Mushroom ketchup .....	20 ounces
Pickled walnut .....	10 ounces
Anchovies .....	4 ounces
Fresh lemon peel .....	1 ounce
Eschalots .....	1 ounce
Horseradish .....	2 ounces
Allspice .....	4 drams
Black pepper .....	4 drams
Cayenne .....	3 drams
Celery seed .....	1 dram
Soy .....	5 ounces

Mix. Macerate for 14 days, and strain.

#### Worcestershire Sauce.

Best vinegar .....	2 pints
Sherry .....	1 pint
Allspice .....	2 drams
Cloves .....	1 dram
Black pepper .....	1 dram
Ginger .....	1 dram
Capsicum .....	1 dram
Mustard .....	2 ounces
Salt .....	2 ounces
Shallots, bruised .....	2 ounces
Moist sugar .....	8 ounces
Tamarinds .....	4 ounces
Curry powder .....	1 ounce

Do not use stock powdered spices, but crush them in a mortar immediately before use. Let all the ingredients simmer for 1 hour in the vinegar, adding more vinegar to keep the mixture to the original volume; then add the sherry, and, if desired, a little burnt sugar to color, and let stand for a week in a closed vessel; then strain and bottle.

## CURRY POWDERS, ETC.

#### Curry Powder.

Cayenne pepper .....	1 to 4 drams
Ginger .....	4 drams
Mace .....	4 drams
Cloves .....	4 drams
Mustard .....	1½ ounces
Turmeric .....	2 ounces
White pepper .....	3 ounces
Fenugreek .....	4 drams

Reduce all to a fine powder and mix thoroughly, passing through a sieve.

#### Curry Powder (Strong).

Cayenne pepper .....	10 drams
Ginger .....	4 ounces
Pimenta .....	4 ounces
Dill fruit .....	4 ounces
Mustard seed .....	8 ounces
Cumin seed .....	8 ounces
Black pepper .....	8 ounces
Fenugreek .....	12 ounces
Turmeric .....	1½ pounds
Coriander .....	5 pounds
Table salt .....	1½ ounces

Reduce all to a fine powder and mix thoroughly, passing through a sieve.



**Curry Powder.**

Coriander .....	1 pound
Curcuma .....	12 ounces
Black pepper.....	8 ounces
Ginger .....	4 ounces
Fenugreek .....	4 ounces
Cayenne pepper.....	1 ounce
Cumin seed.....	1 ounce

Mix as directed in the preceding formula.

**Curry Powder (Mild).**

Mace .....	1 dram
Allspice .....	1½ ounces
Cumin .....	½ pound
Turmeric .....	½ pound
Coriander seed.....	1 pound
Black pepper.....	1 pound

Mix as directed in the preceding formula.

**Curry Powder.**

Black pepper.....	½ ounce
Allspice .....	½ ounce
Mustard (scorched).....	1 ounce
Ginger .....	1 ounce
Fenugreek seed.....	2 ounces
Cinnamon bark.....	2 ounces
Turmeric .....	4 ounces
Coriander seeds.....	4 ounces

Reduce all to a fine powder and mix thoroughly, passing through a sieve.

**Curry Powder.**

Coriander seed.....	1 ounce
Cayenne .....	1 ounce
Cumin seed.....	2 ounces
Mustard .....	3 ounces
Jamaica ginger.....	3 ounces
White pepper.....	6 ounces
Turmeric .....	16 ounces

Mix as directed in the preceding formula.

**Singapore Curry Powder.**

One cocoanut and 1 lime sliced.	
Cardamoms, thoroughly ground .....	2 ounces
Cinnamon .....	2 ounces
Chillies .....	1 ounce
Coriander seed.....	4 ounces
Black pepper.....	4 ounces
Mustard seed.....	2 ounces
Turmeric .....	5 ounces
Ginger .....	4 ounces

Mix as directed in the preceding formula.

**Curry Powder.**

Coriander .....	6 ounces
Cardamom .....	½ ounce
Turmeric .....	3 ounces
Jamaica ginger.....	3 drams
Cayenne pepper.....	3 drams
Cumin seed.....	1 ounce
Fenugreek .....	1½ ounces
Cinnamon .....	2 ounces
Pimenta .....	2 drams
Black pepper.....	1 dram
Cloves .....	1 dram
Nutmeg .....	1 dram

Reduce all to a fine powder. Mix and sift.

**Savoury Ragout Powder.**

Salt .....	1 ounce
Mustard .....	½ ounce
Black pepper.....	½ ounce
Lemon peel (grated).....	½ ounce
Pimenta .....	2 drams
Ginger .....	2 drams
Nutmeg .....	2 drams
Cayenne .....	2 drams

Powder, mix and sift.

**Curry Powder.**

Coriander seed.....	13 ounces
Black pepper.....	5 ounces
Capsicum .....	1 ounce
Cumin seed.....	6 ounces
Fenugreek .....	6 ounces
Turmeric .....	6 ounces

Mix as directed in the preceding formula.

**Mixed Spice.**

Coriander .....	16 ounces
Pimenta .....	4 ounces
Caraway .....	4 ounces
Cinnamon .....	2 ounces
Mace .....	2 ounces
Cloves .....	2 ounces
Nutmeg .....	2 ounces
Turmeric .....	1 ounce

Powder, mix and sift.

**Kitchen Pepper.**

Black pepper.....	1 pound
Mace .....	1 ounce
Nutmeg .....	1 ounce
Cayenne pepper.....	½ ounce

Powder, mix and sift.

**Celery Compound Powder.**

Celery seed.....	3 ounces
Mace .....	½ ounce
Pimenta .....	½ ounce
Table salt.....	12 ounces

Powder fine, mix and sift.

**Mixed Spices.**

Allspice .....	1 ounce
Nutmeg .....	2 ounces
Cloves .....	2 ounces
Cinnamon .....	2 ounces

Powder, mix and sift.

**Mixed Spices.**

Turmeric .....	2 ounces
Licorice .....	2 ounces
Coriander .....	1 ounce
Caraway .....	1 ounce
Fenugreek .....	2 drams
Anise .....	2 drams

Powder, mix and sift.

**Mixed Spices.**

Ginger .....	2 ounces
Nutmeg .....	½ ounce
Cloves .....	1 ounce
Mace .....	½ ounce
Cumin .....	2 ounces
Allspice .....	2 ounces

Powder, mix and sift.

**Celery Salt.**

Common salt.....	4 ounces
Essence of celery.....	2 drams

Mix well together.

**Celery Salt.**

Celery seeds, powdered....	1 ounce
Common salt.....	4 ounces

Mix and sift.

**Kaisergewurz (King's Spice).**

Lemon peel.....	1 pound
Mustard .....	½ ounce
Cloves .....	2 drams
Nutmeg .....	2 drams
Salt .....	1 ounce
Black pepper.....	½ ounce
Ginger .....	2 drams
Capsicum .....	1 dram

Reduce all to a fine powder. Mix and sift.

**German Spice.**

Cardamom .....	1 ounce
Ginger .....	1 ounce
Cloves .....	2 ounces
Anise .....	4 ounces
Coriander .....	8 ounces

Reduce all to powder and mix.

**Zest Powder.**

White pepper.....	2½ ounces
Mace .....	½ ounce
Nutmeg .....	½ ounce
Capsicum .....	½ ounce

Reduce to powder and mix well.

**Easter Bun Spices.**

Nutmeg .....	2 ounces
Ginger .....	1 ounce
Cloves .....	15 grains

Powder, mix and sift.

**Easter Bun Spices.**

Nutmeg .....	6 ounces
Mace .....	1 ounce
Capsicum .....	2 ounces
Cinnamon .....	4 ounces
Ginger .....	8 ounces

Powder, mix and sift.

**CONFECTIONERY, ETC.****Confectioners' Paste Colors.****Red:**

Powdered alum.....	4 ounces
Sodium bicarbonate.....	4 ounces
Powdered cochineal.....	4 ounces
Potassium bitartrate.....	6 ounces

Heat to boiling point, add 1 pound glucose, and cook to 220° F., and pour into a porcelain dish to cool.

Orange: Add to the red above ¼ pound turmeric.

Yellow: Add ½ pound turmeric to 1 pint alcohol, add 1 pound glucose, and cook to 220° F., over a slow fire.

Brown: Take equal parts of red and yellow, and add lampblack, mixed with water, to the desired shade.

Green, light and dark: Can be made by adding Prussian blue to yellow paste, but is usually prepared from spinach.

For all purposes it is better for the candy-maker to purchase his colors ready made, as they cannot, on a small scale, be produced any cheaper than they can be bought of large makers. The French government, which is careful of the health of its citizens and the reputation of its manufactured products, allows for the use of confectioners:

Indigo,  
Prussian blue,  
Ultramarine, for blue.  
Cochineal,  
Carmine,  
Carmine lake, for red.  
Saffron,  
French berries,  
Persian berries,  
Turmeric,  
Fustic, for yellow.

A mixture of one of the yellows and one of the blues, for green.

If the candy-maker desires to experiment in making his own red—the most frequently used color—he may put into a clean copper or porcelain saucepan one-quarter pound cochineal in powder, with 3 pints of water; allow to boil; add 2 ounces alum in powder or cracked small very gradually, and stir. Boil

a minute or two; add gradually 2 ounces powdered soda; boil again a couple of minutes and keep stirring. Finally, add one-quarter pound cream of tartar; boil two or three minutes more and strain through a fine hair sieve or coarse clean muslin. The latter is not good for a strainer, as it takes up so much of the color. Set away in a tightly-corked bottle for use. If this color touches tin or iron it will turn brown.

For yellow, saffron or French or Persian berries may be boiled or infused like tea, and boiled down until it is of the required shade.

Blue can be thus prepared: In a stone-ware jar of 3 gallons capacity, put about two pounds and a half of sulphuric acid. To this add powdered indigo gradually, stirring all the while with a glass rod until the whole forms a pasty mass. It will require about a quarter of a pound of indigo. The jar should stand in a pan of cold water, as the reaction develops much heat and greatly swells the product. Avoid breathing the fumes. After thorough mixture allow to stand an hour or more, to insure perfect solution of the blue. Then fill the jar with cold water, and stir around with the rod. Keep this two or three hours, then pour it out into glass jar of the same size. Now break up some common potash and drop it in small lumps into the blue water. This potash combines with the sulphuric acid and allows the blue in fine particles to drop to the bottom. Keep adding potash as long as the blue continues to fall; let the mixture rest an hour or two, and then pour off the waste. The residue will be blue coloring which can be dried for use. Keep in an air-tight jar; it will remain good for an indefinite period. It mixes with water in any proportion, and in the proportion generally used to color confectionery it is harmless. The blue is somewhat muddy when used in candy.

Green, as already stated, may be made of the blue and yellow mixed—purple, of the red and blue mixed. Brown may be made of burnt sugar, so-called, or caramel, which is sugar boiled until it assumes a dark-brown color. By mixing this substance with water, all shades of brown may be made. Mixing chocolate with water will also give a good brown. Black is ivory black or bone charcoal, ground fine, and mixed with a little gum arabic. It is used in the candy as well as on it—that is, toy candies are sometimes painted with it, mixed with syrup. The animal charcoal is harmless, however used.

The color is mixed by many on the slab of marble or iron just after the candy is poured out on the slab. For this purpose, the colors should be rubbed up with good sweet oil to about the consistency of paint or cream. Oil is readily incorporated with the candy. A sufficient quantity of the color having been taken (and this must be a matter of judgment and practice), it is worked into the hot candy with the palette (large) knife and by doubling and rolling the candy.

**Harmless Green for Sweetmeats.**

Take 5 grains saffron and shake it up in ¼ ounce of distilled water, and allow the mixture to stand for 24 hours. Also take 4 grains of indigo carmine, and with ½ ounce of distilled water treat in the same way as the former. At the end of the 24 hours the two solutions are mixed together, producing a fine green solution, capable of coloring 5 pounds of sugar.

**Coal Tar Dyes.**

In the words of Food Inspection Decision No. 76, the use of any dye, harmless or otherwise, to color or stain food in a manner whereby damage or inferiority is concealed

is specifically prohibited by law. There are certain approved coal tar dyes which may be used in foods or beverages, however, and these are: Red shades: 107. Amaranth. 56. Ponceau 3 R. 517. Erythrosin. Orange shades: 85. Orange I. Yellow shade: 4. Naphthol yellow S. Green shade: 435. Light green S.F. yellowish. Blue shade: Indigo disulfacid. The numbers preceding the names refer to the number of the dye in question as listed in A. G. Green's edition of the Schultz-Julius Systematic Survey of the Organic Coloring Matters, published in 1904. It is required that each of the dyes shall be free from any coloring matter, other than the one specified, and shall not contain any contamination due to imperfect or incomplete manufacture. The list is said by experts to be sufficiently large to furnish colors for all legitimate confectionery and food-coloring purposes.

## CHEWING GUM.

### Cheewing Gum.

The basis of nearly all brands of chewing gum on the market is chicle, some paraffin or wax being occasionally added, it is said, to harden the mass. The most successful manufacturers attribute their success to the employment of the most approved machinery and the greatest attention to details.

Chicle gum.....	56 parts
Hard paraffin.....	15 parts
Balsam of tolu .....	2 parts
Balsam of peru .....	2 parts
Granulated sugar, fine.....	160 parts
Glucose .....	64 parts
Water, q. s.	

Soak the chicle in the water until it absorbs all that it will take up. Melt the paraffin and balsams together and add the swelled chicle. In the meantime mix the sugar with 50 parts of water and boil together until a little of the liquid, withdrawn on the end of a stick, and quickly dipped into a glass of cold water, snaps between the fingers on an attempt to bend it ("crack" degree). When this point is reached, quickly remove from the fire and pour out on a large marble slab, the surface of which has been previously greased with butter or good sweet oil. As soon as the syrup is spread, add to it, a little at a time, carefully working in, the melted mixtures of gums, paraffin, etc., until a portion of the mixture is found to have the proper degree of toughness. The flavoring (any desired essential oil) should be well incorporated with the paraffin and gum mixture before adding to the syrup. Some experimenting may be necessary to adjust the quantities to a nicety with the different batches worked or sample of chicle employed, but the proportions named in the formula are practically those generally employed.

### Cheewing Gum.

Gum chicle.....	1 pound
Powdered sugar.....	3 pounds
Flavoring, a sufficiency.	

The gum chicle is coarsely powdered and triturated with 1 pound of sugar, and the powder passed through a fine sieve. The remainder of the sugar is then mixed in, and the vessel containing the mixture is heated on a sand bath until the mass softens on stirring. It is then well worked and transferred to a slab sprinkled with sugar. The flavoring or other ingredients are next sprinkled upon the mass and mixed by kneading. Finally it is rolled out into thin sheets and cut into flat sticks of the desired

size. The favorite flavorings are peppermint and wintergreen oils, but cinnamon, cardamoms, cloves and other odoriferous substances are employed.

### Cheewing Gum.

Chicle, 20 parts; spruce gum, 20 parts; sugar, 60 parts. Melt the gums separately, mix, while hot, and immediately add the sugar, a small portion at a time, kneading it thoroughly on a hot slab. When completely incorporated, remove to a cold slab, previously dusted with powdered sugar, roll out at once into sheets, and cut into sticks. Any desired flavor or color may be added to or incorporated with the sugar.

### Cheewing Gum.

Balsam tolu.....	4 parts
Resin (white).....	10 parts
Paraffin .....	3 parts
Powdered sugar, a sufficiency.	

Melt the gums and paraffin together, strain, and, while still fluid, incorporate the sugar. Roll out with powdered sugar and cut into sticks.

### Cheewing Gum.

Prepared balsam of tolu..	3 ounces
White sugar.....	1 ounce
Oatmeal .....	3 ounces

Soften the gum on a warm bath and mix the ingredients; then roll into finely powdered sugar or flour to form sticks to suit.

### Cheewing Gum.

Balsam of tolu.....	4 ounces
Gum benzoin.....	1 ounce
White wax.....	1 ounce
Paraffin .....	1 ounce
White sugar.....	1 ounce

Make into a mass while warm and allow to cool, and cut into blocks.

### Cheewing Gum.

Gum chicle.....	3½ pounds
Paraffin wax.....	1 pound
Balsam of tolu .....	2 ounces
Balsam of peru .....	1 ounce

Soak the chicle in as much water as it will take up, melt the paraffin and mix all together. Now take:

Sugar, finely granulated..	10 pounds
Glucose .....	4 pounds
Water .....	3 pints

Put the sugar and glucose into the water, dissolve and boil them up to "crack" degree (so termed by confectioners), and pour the syrup upon an oiled slab and turn into it sufficient of the above mixture to make it tough and plastic, adding any one of the following flavors, if desired: Cinnamon, chocolate, sandalwood, myrrh, galangal, ginger or cardamoms. Mix thoroughly, and when sufficiently cool, roll into plates or sticks.

### Cheewing Gum.

Yellow wax.....	10 ounces
Balsam of tolu .....	2 pounds
Balsam of peru .....	1 ounce
Gum thus.....	15 ounces
Venice turpentine.....	20 ounces
Melt together and add in fine powder:	
Cinnamon .....	6 ounces
Chocolate .....	10 ounces
Red sandalwood.....	2 ounces
Ginger .....	1 ounce
Sugar .....	2 ounces

Proceed as directed in the preceding.



**Chewing Gum.**

Chicle .....	3¾ pounds
White wax.....	1 pound
Sugar .....	10 pounds
Glucose .....	2 pounds
Water .....	3 pints
Balsam of peru.....	1 ounce
Flavoring, enough.	

Prepare as directed in the preceding formula.

**ICE CREAM.****Ice Cream.**

Many operators experience difficulty at the start in learning to properly freeze ice cream. As a rule, cream sweetened to excess, that is, with more than half a pound of sugar to the quart, will lose the flavor of the cream and the other ingredients and also, will take a greater length of time to freeze. Too little sugar, on the other hand, tends to make the finished product lumpy and coarse. This condition is especially noticeable in water ices, which, as a rule, need considerably more sugar than ice cream. But with these also, too much sugar makes the freezing operation difficult, it becoming a hard matter to turn out a product of proper consistence.

In freezing ice cream the machine should not be turned too fast at the start; if this be done the cream is apt to get buttery. As the operation proceeds, the rate of speed may be increased until the batch is completely frozen. By doing this the cream is "lightened" and tends to gain in bulk. A 40-quart freezer maintaining a speed of 80 revolutions a minute will require about 20 minutes to finish the batch.

The production of artificial cold to freeze cream is based upon the principle in physics that if the liquefaction of a solid can be accelerated by the action of the other ingredients of the mixture, it will absorb notable quantities of heat from surrounding bodies, and thus act as a refrigerating or freezing mixture. Thus a mixture of two parts of powdered ice or snow and one part of salt will rapidly reduce the temperature of substances around which it may be packed. The salt at once forces the liquefaction of the ice, thereby lowering the temperature, and the water from this liquefaction dissolves the salt, again lowering the temperature, so that their combined action is quite energetic in the way of absorbing heat from surrounding bodies. In making ice cream, the medium of refrigeration is finely broken ice and salt; the freezer is packed with the crushed ice, mixed with rock salt, practically in the proportion of about four pounds of ice to one of salt. All frozen goods are packed and repacked with this mixture, with an addition of more or less salt, as the case may require; more salt will tend to freeze quicker but will consume more ice. When a batch of cream is frozen it should be repacked or transferred to another can and left standing at least half an hour, to "ripen" before being served.

As we have indicated, the absorption of sensible heat, when solid bodies pass into the liquid state, produces artificial cold. The melting ice absorbs the heat from the cream, or whatever may be placed in the freezer, and reduces the temperature to the freezing point. The finer the ice, the quicker it melts, and the more the mixture is stirred, the sooner will all parts come in contact with the cold surface of the can and become chilled. For this reason the ice should be

crushed until it is fine and mushy, not merely broken into lumps; and also, because large pieces with sharp edges or corners will dent the can. The melted ice and salt should surround the can and not be drawn off as fast as melted. The outlet for drawing off the water should be just below the top of the can and always open to allow the water to run off before it can get inside of the can. Do not draw off the water from the melted ice during the process of freezing, unless the tub is so full that the ice clogs the outlet.

To begin freezing, see that the freezer is properly adjusted before putting in the cream. Lift out the gear-frame, being careful not to pull the beater shaft out of the socket. Turn in the cream, adjust the cover and gear-frame, fasten down the latch-end and pack in the ice and salt. Put in a layer of ice, about three inches, pack solidly, then a measure or scoopful of salt, scattered evenly over the ice; fill the tub with alternate layers of ice and salt, three measures of ice to one of salt, till the top is reached, packing closely. When the freezer is properly packed and in readiness to freeze, it should be allowed to stand until the cream begins to freeze, a point which can be determined by turning the crank two or three revolutions. When this point has been reached, turn the crank until the mixture is well frozen. Remove the beater, scrape off the cream from the sides and pack it closely in the can. Put a cork in the opening of the cover and keep the can down in the ice. Cover with a piece of burlap.

**Ice Cream Standard.**

The food laws of some of the States do not name a standard of butter fat for ice cream, the only requirement being that the product shall be made of pure ingredients and unadulterated. The percentage of butter fat usually followed by the Federal authorities is 14 per cent, and this standard prevails in many localities. The standard for ice cream containing fruits or nuts is about 2 per cent less. In many of the States, the authorities do not prohibit the manufacture of ice cream containing less than 14 per cent of butter fat, provided the manufacturer labels his product in a manner which shows the deviation from such standard.

Ice cream can be made within a comparatively wide range of price. By the substitution of milk or evaporated milk for a part of the cream, it is possible to make ice cream for 38 to 40 cents a gallon, although a good cream and one conforming to the highest standard of butter fat will cost much more.

**Ice Cream.**

For 10 gallons of ice cream: Take 50 pounds (about 6 gallons) of aged 18 per cent cream ( $\frac{5}{8}$  gallons of cream and  $\frac{1}{8}$  gallon of condensed milk), about 8 pounds or sugar, 3 to 4 ounces of vanilla extract, and if a binder is called for, from 3 to 4 ounces of gelatin.

The sugar should be thoroughly dissolved in the cream before freezing. For 1 gallon of cream, take 2 quarts of 22 per cent cream. 11 ounces of sugar, and  $1\frac{1}{2}$  tablespoonfuls of vanilla extract.

**Ice Cream.**

Milk, 3 gallons; cream, 3 gallons; pulverized sugar, 3 pounds; flour, 2 pounds; eggs, 3 dozen; vanilla extract, 3 ounces. Mix the cream and 2 gallons of the milk and bring to a boil in a double boiler; mix the sugar and flour carefully; beat the eggs to a light foam, add the cold milk and sugar mixture; after well stirring, add the scalded milk. Turn all back into the double boiler and cook for 20 minutes; stir constantly until smooth, then pass through a wire strainer

and flavor as soon as the mixture is cold. If the milk is steaming hot when the flour is added, and then cooked thoroughly, there will be no taste of the flour.

Second Method: If obliged to use all milk, take twice as many eggs and add  $\frac{1}{2}$  pound of butter when the thickened milk is taken from the fire. Instead of flour, two-thirds of the quantity of cornstarch may be used.

Third Method: If desired, the milk only may be cooked and the cream added to the cooled mixture.

Have the mixture well chilled; in packing the freezer, salt lightly for the first 10 minutes in order that the cream may be thoroughly whipped before it begins to freeze; then add more salt and complete the freezing, which should not take more than 15 or 20 minutes in all. By salting heavily, the time can be somewhat shortened. Remove the can at the proper time, for if the cream be frozen too hard, the product will be "waxy," and if it is not frozen rapidly after the air is beaten into it, the mixture will "go down" before it is sufficiently hardened. It is important that these points should be watched.

#### Ice Cream.

Granulated sugar.....	1 pound
Cream, or milk, fresh.....	$\frac{1}{2}$ gallon
Fresh eggs.....	12
Salt .....	1 saltspoonful
Extract of vanilla.....	$\frac{3}{4}$ fl. ounce
Gelatin .....	1 av. ounce

Into a clean copper or enameled-iron dish put the sugar and eggs, mix well together, add the milk or cream, salt, place the vessel upon the fire, and stir until the mixture thickens (but not curdles). Strain into the freezing can, allow to cool, add the extract and the gelatin, dissolved in some hot water. Surround the can with the freezing mixture, and turn the freezer until it can no longer be worked; then remove the dasher or beater, press the cream firmly down into the can, repack with fresh ice and salt, and cover with blankets or burlap, and set aside for an hour or two to harden.

#### French Ice Cream.

Make a good custard foundation in the usual way by heating it on the stove, taking great care not to let it curdle. Then add any flavor desired, and when cool, stir in two cupfuls of cream, two cupfuls of rich milk, one cupful of sugar, and the yolks of three or four eggs. Three egg yolks are usually sufficient, but when a deep yellow color or a product of special richness is desired, four or even five egg yolks may be used. The amount of sugar also may be varied. A chocolate cream generally calls for a little more, and so does a caramel cream. In the latter case, three tablespoonfuls are browned over the fire and then dissolved in a few spoonfuls of boiling water. No white sugar is needed in a maple ice cream, one and a half cupfuls of maple sugar being used in its stead. The maple sugar is melted and mixed with the ice cream before freezing.

#### Fancy Fruit Nut Cream.

To three cupfuls of raspberry or strawberry syrup add a teaspoonful of granulated gelatin that has been dissolved in a cupful of boiling water and the juice of half a lemon. When this is very cold, turn it into a brick ice cream mold and put the cream mixture together. A pint of heavy cream is whipped to a stiff froth and to it are added a pinch of salt, six or eight maroons broken into small pieces, one-half cupful of powdered sugar, and a teaspoonful of vanilla extract. The cream mixture is then turned into the mold over

the fruit mixture, a piece of paraffin paper put over the top, and the cover fastened down and made waterproof. The mold is then buried in ice and salt and allowed to stand three and one-half hours.

#### Maple Ice Cream.

Beat the yolks of four eggs and add one cupful of sugar. Slowly turn over this, stirring briskly the while, a pint of scalded milk and cook ten minutes. When the custard is cold, add one cupful of maple syrup,  $\frac{1}{4}$  teaspoonful of salt, and a tablespoonful of extract of vanilla. Whip two quarts of cream to a dry froth, beat in the custard and freeze. Serve with maple sauce made by beating the yolks of two eggs with a pinch of salt and one cupful of hot maple syrup. Cook just below the boiling point until thick, then stir in one cupful of whipped cream. Chill this sauce before serving.

#### Nut Frappe Ice Cream.

Nut frappe, 1 quart; maple fudge, 1 quart; extract of vanilla, 1 ounce; cream, 5 gallons; powdered sugar, 1 pound; caramel, to color a light brown. Mix and freeze in the usual manner.

#### Vanilla Ice Cream.

Starch or arrowroot.....	1 av. ounce
Eggs .....	4
Milk .....	$\frac{1}{2}$ gallon
Cream .....	2 pints
Extract of vanilla or other flavor .....	sufficient

Make a smooth mixture of the starch and eggs with a portion of the milk, heat the remainder of the milk and, when nearly boiling, add it in small quantities to the starch and egg mixture with stirring. When one-half is added pour the mixture back into the hot milk, stir for a few minutes, allow to cool, add the cream, and freeze.

#### Real Caramel Ice Cream.

Into a kettle put 10 pounds of sugar and half a gallon of cream, and cook until the mixture browns and grains; then add  $4\frac{1}{2}$  gallons of cream, 3 dozen eggs, 5 ounces of gelatin, previously softened in water, and sufficient extract of vanilla to flavor. Strain the mixture, let stand for awhile, then freeze.

#### Fruited Ice Cream.

Sweet cream, 5 gallons; granulated sugar, 7 pounds; ice cream powder, 6 ounces; extract of vanilla, 3 ounces; fruit puree, any desired flavor,  $\frac{1}{2}$  gallon. Mix the ice cream powder thoroughly with sugar, add the cream and stir until dissolved, then add the fruit puree and freeze. Color if desired. This is said to make 9 or 10 gallons of very fine cream. A fruited product may also be made from one gallon of ice cream and 8 ounces of the fruit puree.

#### Cherri-nut Ice Cream.

Add to two gallons of ice cream, just at the point of freezing, 8 ounces of crushed maraschino cherries, and 8 ounces of walnut sundae mixture. Then freeze all together. A fine delicacy.

#### Chocolate Bavarian Cream.

For a large mold, take half a package of gelatin, 4 ounces of milk, two quarts of whipped cream, 4 ounces of sugar, and  $2\frac{1}{2}$  ounces of chocolate. Soak the gelatin in cold water for two hours. Whip and drain the cream, scrape the chocolate, and put the milk on to boil. Put the chocolate, two tablespoonfuls of sugar and one tablespoonful of hot water in a small saucepan, and stir over a hot fire

until the mixture is smooth and glossy. Stir this into the hot milk, then add the soaked gelatin and the remainder of the sugar. Strain into a basin that will hold two quarts or more, place the basin in a pan of ice water, and stir until cold, when the mixture will begin to thicken. Immediately begin to stir in the whipped cream, adding half the quantity at once. When all the cream has been added, dip the mold in cold water and turn the cream into it. Place in the ice-chest for an hour or more to solidify. To serve, dip the mold in tepid water, turn out on a flat dish and dress with whipped cream.

#### Grape Sherbet Ice.

Grape juice.....1½ pints  
Water.....2½ pints  
Granulated sugar.....1½ pounds  
Powdered sugar.....1½ ounces  
Whites of three eggs.

Mix the juice, water and granulated sugar in a freezer and partially freeze; then gradually add the egg-whites previously well mixed with the powdered sugar, and freeze until hard.

#### Cherry Ice Cream.

Crushed cherries, chopped fine, 1 pint; granulated sugar, 2 pounds; cream, or cream and milk mixed, 2 gallons; mix and freeze; add color, if desired. Or, mix 1 pint of chopped cherries with 2½ gallons of plain or vanilla ice cream, adding coloring, if necessary. Top off with one cherry when serving.

#### Strawberry Soufflé.

Take rich vanilla ice cream and beat into it an equal quantity of strawberry fruit water ice and a pint of cold cream, whipped to a froth, for each gallon. Then pack in a mold, bomb, or well-iced packer. All other soufflés may be made in a similar manner with an ice cream base, the soufflé taking its distinguishing name from the water ice used in its preparation.

#### Custard Ice Cream.

Fresh milk, 2 gallons; granulated sugar, 2 pounds; eggs, 36; flavoring, as desired. Beat the eggs thoroughly and add the sugar, stirring up well together; put the milk on the fire, stirring all the time until it boils; pour the milk into the sugar and egg mixture under constant stirring and set on the fire, continuing the stirring for a few minutes or until the mixture is slightly thickened. Strain, cool, flavor and freeze.

#### Frozen Banana Pudding.

Peel and cut into slices 1½ dozen bananas, then mash them fine; dissolve 1½ pounds of sugar in 1 quart of water by means of heat, strain, and when cool, add the mashed bananas and the freshly expressed juice of two oranges. Put the mixture into a freezer, turn slowly until frozen, then remove the dasher and carefully stir in two pints of whipped cream. Serve in glaze glasses.

#### Caramel Ice Cream.

Cream, 3 quarts; milk, 1 quart; sugar, 3 pounds; eggs, three; chocolate, 2 ounces; caramel coloring, 2 ounces; vanilla extract, ¼ ounce; coffee extract, ½ ounce. Heat the milk and dissolve the chocolate in it. Mix the eggs with the extracts and caramel, and add to the milk and chocolate, mixing thoroughly; strain into a freezer, adding the cream and sugar, then freeze. Should make two gallons of finished product.

#### Fruit Ice Cream.

Milk, 1 pint; sugar, 2 cupsfuls; flour, 1 small tablespoonful; two eggs; gelatin, 2 tablespoonfuls, soaked in a little water; cream, 1 quart; four bananas; candied cherries, ½ pound. Other fruit may be added, if desired. Let the milk come to a boil, beat the flour, sugar and eggs together, and stir into the boiling milk; cool 20 minutes, then add the gelatin. When cold, add the cream. Put into the freezer, freeze 10 minutes, add the fruit, and finish freezing.

#### Hazelnut Ice Cream.

Roast five ounces of hazelnuts to a light brown color, then remove the skins; this is best done by rubbing them in a towel and then through a sieve, when the skin is easily shaken off. Pound the hazelnuts in a stone mortar with some of the cream to a fine pulp. Next put 4 quarts of cream with ¼ pounds of sugar into a boiler over the fire and heat; just before it has reached the degree of boiling, add 12 egg yolks previously beaten up with some of the cream. The hazelnuts should be added to the cream at the outset, thus increasing the flavor. Pass through a fine sieve, and when cold freeze in the usual manner.

#### Melon Ice Cream.

Scrape out the soft center of a cantaloupe, press through a colander, and add to it milk and cream in equal quantities, with sufficient sugar to sweeten, and freeze. In serving, the obviously proper receptacle will be the rinds of the melons.

#### French Chocolate Ice Cream.

Cream, 4 quarts; chocolate, 10 ounces; sugar, 2½ pounds; vanilla extract, a sufficiency; yolks of 12 eggs. Slowly melt the chocolate in a boiler, adding gradually the sugar and cream, constantly stirring until the mixture has reached the boiling point. Then add the yolks of the eggs, which should be thoroughly incorporated with the mixture by whisking, strain and cool; then add the vanilla extract and freeze.

#### Coffee Ice Cream.

Cream, 4 quarts; sugar, 1¾ pounds; yolks of 8 eggs; good ground coffee (or the equivalent of extract), 3 ounces. Place the sugar, one-half of the cream, and the coffee in a pan over a slow fire and heat with constant stirring until the mixture has reached the boiling point. Then mix up the egg yolks with the remainder of the cream, add to the mixture first made, carefully heating until the boiling point is reached. Then strain through a fine sieve or cloth, cool and freeze.

#### Walnut Bisque.

Stir one-eighth of a teaspoonful of salt and one tablespoonful of flour into a cupful of cupfuls of scalded milk, stirring briskly the while. Have one egg slightly beaten and pour a little of the hot liquid over it, then turn the egg into the milk. Cook 10 minutes over hot water, stirring well the first three minutes. When the custard is cold, add one quart of cream and two tablespoonfuls of extract of vanilla, and strain into the freezer can. Chop one cupful of English walnut meats very fine, turn into the custard and freeze the mixture. Serve in tall glasses with hot chocolate sauce made as follows: Melt two squares of unsweetened chocolate in two-thirds of a cupful of boiling water. Add two cupfuls of sugar and two tablespoonfuls of butter, and boil slowly for 15 minutes. Cool a little before flavoring with one teaspoonful of ex-



tract of vanilla. This can be served with a crushed fruit sauce.

#### Berry Banana Ice Cream.

Make the custard for the cream at least two hours before freezing by bringing three cupsful of milk to a boil, dissolve  $1\frac{1}{2}$  cupsful of sugar in it, and turn immediately over the well-beaten yolks of three eggs. Cook the custard over hot water until it thickens, then strain; add six tablespoonfuls of orange flower water and set aside to cool. When this is ready to freeze, add to this custard one dozen bananas that have been pressed through a fine sieve or fruit press, and one pint of double cream that has been whipped to a stiff froth. Chill this well in the freezer before adding the strained juice of three lemons. Finish freezing and leave the cream two hours to ripen. Serve in tall glasses or sherbet cups with a covering of fresh berries, and add whipped cream on top of each portion.

#### Maple Ice Cream.

Beat the yolks of four eggs and add one cupful of sugar. Slowly turn over this, stirring briskly the while, a pint of scalded milk and cook 10 minutes. When the custard is cold, add one cupful of maple syrup, one-quarter teaspoonful of salt and one tablespoonful of vanilla extract. Whip two quarts of cream to a dry froth, beat in the custard and freeze. Serve with maple sauce made by beating the yolks of two eggs with a tiny pinch of salt and add one-half cupful of hot maple syrup. Cook just below the boiling point until thick, and then stir in one cupful of whipped cream. Chill the sauce before freezing.

#### Nut Caramel Bomb.

Nut Caramel Bomb is a delicious combination of strawberries or red raspberries with nut caramel ice cream. The strawberry or raspberry cream is made by straining one pint of sweetened berries or canned berries over one teaspoonful of granulated gelatin that has been dissolved in one cupful of hot water. Add the juice of one lemon and freeze as usual. For the nut caramel filling for the bomb, turn one-half cupful of white sugar into a hot saucepan and shake it carefully over a blaze until the sugar is melted but not scorched. It will form into a ball before the melting point is reached. Add one-fourth of a cupful of boiling water, and when all the caramelized sugar has been converted into syrup, stir in one-half cupful of finely chopped filbert meats. Turn the hot syrup over the well beaten yolks of four eggs and cook in a double boiler until the custard is thick. Chill the custard quickly, then whip one and one-half cupsful of double cream to a stiff, dry froth, beat in the custard and add one teaspoonful of vanilla extract and a tablespoonful of nutmeats broken into small pieces. Line a melon or brick mold with the berry cream and fill the center to overflowing with the nut caramel. Next, place a piece of paraffin paper over the top of the cream, close the cover of the mold and seal with a strip of muslin that has been dipped into melted paraffin or lard. Pack in chipped ice and salt in the proportion of three parts ice to one part of salt and leave three hours to ripen.

#### Brick Ice Cream.

Cream, 18 per cent.....	4 gallons
Condensed milk, unsweetened .....	1 gallon
Powdered sugar.....	7 pounds
Egg yolks.....	3 dozen
Extract of vanilla.....	3 ounces
Gelatin .....	2 ounces

Beat the yolks of the eggs until they are

foamy; add the cream and sugar, mixing well; bring to the boiling point only in a double boiler, stirring thoroughly; add the condensed milk, mix, strain, cool, add the gelatin dissolved in a little hot milk, flavor and freeze. If preferred, the beaten whites may be used instead of the yolks, making a white cream instead of yellow.

Put the cream up in plain vanilla bricks, or three flavors to each quart, viz.: raspberry, nut and vanilla; vanilla, strawberry and chocolate; vanilla, caramel and orange ice. The gelatin may be omitted; use great care in cooking, bringing to the boiling point only, as too much or too little cooking will spoil the resulting cream.

Ice cream for sale in the form of bricks, should be of good body, especially if it is designed to be delivered to the customer, wrapped in paper and packed in a paper box. It is generally made with gelatin or some other "filler." In filling the molds handle them quickly and make them so full that the cream will be forced out at the edges of the cover, which will prevent any possible salting of the contents, as this overflow freezes immediately on contact with the ice and salt, and "seals" the brick.

For making up large lots use the "slab brick" molds, making 4, 6 or 8 quarts at a time. These molds must be left for an hour or two packed in ice and salt to harden, so as to stand handling and wrapping. When well set take a brick out of the ice, dip it in cold water, take off the cover, and remove the sheet of waxed paper, which is designed to prevent the contents from sticking to the cover, and drop the slab on a sheet of waxed paper on the table. The cream will slide out easily. Quickly cut into quart bricks, wrap each in a sheet of paper (waxed vanilla cut 10x14 is most used), fold the paper box about the bricks, pack in a square tank (or an ordinary packer) in cross layers to allow the circulation of cold air. Of course, as stated above, it adds greatly to the appearance of the "brick" to put the cream up in combinations of three colors, vanilla, strawberry and caramel, or vanilla, orange or some other fine ice between, and caramel or chocolate for the bottom layer.

#### Hokey Pokey Ice Cream.

Milk, 3 gallons; cream,  $1\frac{1}{2}$  gallons; condensed milk, 1 gallon; granulated sugar, 8 pounds; gelatin, 12 ounces; extract of vanilla, 4 ounces. Put the gelatin and 2 quarts of milk into a double boiler, and heat until dissolved. Mix the other ingredients, and stir and strain the gelatin into the mixture. This makes a very fair cream which molds and cuts well. It may be put up in quart bricks and these cut into eight 5-cent slices; these slices should be wrapped in waxed paper (cut 7x9) and quickly dropped into an iced packer.

#### Hokey Pokey Ice Cream.

This is nothing more than frozen custard rendered firm by the addition of gelatin. To make it, proceed as follows: Prepare a custard, and when it is about cold, add to it about one and one-half ounces of gelatin dissolved in about one half pint of water; stir the whole well together, put it into the freezer and proceed with the freezing process, stirring slowly; when frozen, mold into bricks and bury them in broken ice and salt until hard; remove from the molds in the usual manner, and with a knife cut into small squares; dip the knife into hot water while cutting the pieces, then wrap the squares in wax paper, and put them in the ice chest until needed.

#### Charlotte Russe.

The making of charlotte russe presents no insurmountable difficulties, while the "shells"

can be purchased from any manufacturer or dealer in baker's supplies. A good formula is the following:

Gelatin .....	½ ounce
Good, rich cream.....	2 pints
Powdered sugar.....	8 ounces

Soak the gelatin in 8 ounces of cream for half a day, or over night, then heat and stir until dissolved; remove from the fire, strain through cheesecloth and allow to cool. Add to the remaining cream, contained in a pan that is packed in ice, and whip to stiff froth. Add the flavoring and whip again. Flavor with chocolate, strawberry or any desired flavor. For chocolate, use about 2 ounces dissolved in a little cream; extract of vanilla, about 3 drams; fruit juice, about 1 ounce.

A so-called "Charlotte Russe" delicacy dispensed at some fountains is made as follows:

Shaved ice.....	½ tumblerful
Vanilla syrup.....	1 fl. ounce
Cream .....	6 fl. ounces
One egg.	

Shake well and fill the glass with carbonated water, using the fine stream. Serve in a 14-ounce tumbler with a spoon; when rightly made the beverage will have a "head" like a charlotte russe. Some formulas under the above name contain brandy or other spirituous liquor, the charlotte a la russe effect being given to the beverage by the addition of whipped cream.

#### Marshmallow Whip.

There are several different styles of marshmallow for topping off ice cream or for the fountain. The simplest way to make it on a small scale is as follows: Coarsely grind one pound of picked white gum senegal or gum arabic; pour a pint of boiling water over it and stir immediately to prevent it from running together in a lump, and continue the stirring until the gum is dissolved; strain through a fine sieve, add half a pound of powdered sugar, set the pan in another pan, or in a farina boiler on the fire, stirring until the sugar is dissolved; beat up one pint of fresh whites of eggs with enough powdered sugar and half an ounce of cream of tartar to make a very light icing, add slowly the gum solution; if too stiff add a little plain cold syrup. Flavor with vanilla and pour the whip into a china bowl, which cover with white gauze and set on the counter. This whip does not keep well, however.

#### Marshmallow Whip.

Place four pounds of sugar, one pound of glucose, and water enough to dissolve the sugar, into a small pan; set on the fire and stir until the sugar is dissolved, wash down the sides of the pan and cook to 240° F. Meanwhile, have one pint of fresh whites of eggs beaten stiff, and pour the sugar in a fine stream into the beaten whites, stirring with an egg beater while pouring the sugar, then pour into it ten ounces of melted and strained gum arabic and beat until the whip is cold; if too stiff, add a little plain syrup.

#### Ice Cream.

Soak ½ package of Cox's gelatin in a pint of milk; boil 3 pints of milk, and while hot pour on the gelatin, stirring till dissolved; when cold add 2 quarts of cream, sweeten and flavor to taste, then freeze.

#### Ice Cream.

Milk, 6 quarts; Oswego cornstarch, ½ pound. First dissolve the cornstarch in 1 quart of milk, then mix all together and just simmer a little (not to boil); sweeten, flavor to taste and freeze.

#### Ice Cream.

Irish moss, 1½ ounces; milk, 1 gallon. First soak the moss in a little cold water for an hour, and rinse well to clear it of sand and a certain peculiar taste; then steep it an hour in milk just at the boiling point, but do not allow to boil; it imparts a rich color and flavor without eggs or cream.

#### Ice Cream.

Dissolve 5 teaspoonfuls of Oswego starch or arrowroot in a teacupful of milk. Add to it the whites of 3 eggs well frothed, and the yolk of one well beaten; sweeten and boil half a gallon of new milk. As soon as it begins to boil, pour it in small quantities over the mixture of eggs and starch till about half the milk is taken out of the kettle. Then pour all back into the kettle and stir a few moments. After it cools add one quart of rich cream; flavor to suit and freeze.

#### Ice Cream.

One quart of milk, two eggs, one teaspoonful of cornstarch, one teaspoonful of arrowroot, a small lump of butter, flavor and freeze.

#### Ice Cream Cones.

Granulated sugar.....	10 pounds
Pastry flour.....	20 pounds
Fresh eggs.....	5 dozen
Extract of vanilla.....	8 ounces

Water (orange flower, if desired), enough. Make a batter and mold on iron cones. This is enough for 1000 cones.

#### Ice Cream Color, Green.

Chlorophyll dissolved in diluted alcohol is the best to use. A mixture of saffron or turmeric solution with indigo-carmin is also used, and a variety of green shades may be obtained by using various proportions.

#### Ice Cream Color, Red.

Cochineal solution or carmine solution gives goods results and is harmless.

#### Ice Cream Colors, Yellow.

Tincture or infusion of saffron and tincture of turmeric impart a good harmless yellow color.

#### Fruit Ice Creams.

The following formulas indicate some of the proportions of fruit that may be used with almost any good unflavored ice cream to produce an ice cream of corresponding flavor:

#### Blackberry Ice Cream.

Blackberry juice.....	2 ounces
Ice cream.....	9 ounces

#### Cherry Ice Cream.

Cherry juice.....	2 ounces
Ice cream.....	8 ounces

#### Raspberry Ice Cream.

Raspberry juice.....	2 ounces
Ice cream.....	10 ounces

#### Chocolate Ice Cream.

Ice cream.....	10 ounces
Chocolate .....	6 ounces
Powdered vanilla.....	1 dram
Sugar .....	2 ounces

#### Brandy Ice Cream.

French brandy.....	2 ounces
Ice cream.....	10 ounces
Orange wine.....	2 ounces

**Claret Ice Cream.**

Claret .....	2 ounces
Ice cream.....	9 ounces

**Currant Ice Cream.**

Currant juice.....	1½ ounces
Juice of one lemon,	
Ice cream.....	9 ounces

**Lemon Ice Cream.**

Lemon essence.....	½ ounce
Ice cream.....	10 ounces

**Madeira Ice Cream.**

Madeira wine.....	2 ounces
Ice cream.....	10 ounces

**Peach Ice Cream.**

Peach juice.....	2 ounces
Juice of one lemon,	
Ice cream.....	10 ounces

**Pineapple Ice Cream.**

Pineapple juice.....	1½ ounces
Juice of one lemon,	
Juice of three oranges,	
Ice cream.....	8 ounces

**Strawberry Ice Cream.**

Strawberry juice.....	2 ounces
Juice of one lemon,	
Ice cream.....	10 ounces

**Vanilla Ice Cream.**

Essence of vanilla.....	½ ounce
Juice of ½ lemon,	
Ice cream.....	10 ounces

**Fruit Ice Cream.**

Ice cream of fruits not mentioned above may be made by mixing 2 ounces of the juice of any desired fruit with 10 ounces of ice cream.

**Ice Cream Powder (Ice Cream Filler).**

Powdered starch.....	1 ounce
Powdered sugar.....	1 ounce
Orange dye.....	5 grains

Mix well and sift.

This quantity is sufficient for 1 pint of milk. Mix the powder with the milk and bring to a boil. When cool, put in the freezer.

**Ice Cream Powder.**

Powdered starch.....	1 ounce
Rice flour.....	1 ounce
Powdered sugar.....	1 ounce
Saccharin .....	5 grains

Mix and sift. Enough for two pints of milk.

**Ice Cream Powder.**

Gelatin, cornstarch, Irish moss, arrowroot, etc., as given above in the formulas for ice cream, may be used as fillers by omitting the milk and water, and sifting the powders. The eggs should be boiled hard and powdered.

**Coffee Tablets.**

Java coffee.....	8 ounces
Mocha coffee.....	8 ounces
Water, boiling.....	½ gallon

Extract the powdered coffee with the boiling water. Decant and evaporate in vacuo at low temperature, to ½ pint. Add 1 pound granulated sugar, dissolve and again evaporate till the mixture is nearly dry. Add sugar of milk until the powder is nearly dry and press into tablets.

**Coffee Tablets.**

To the syrupy liquid obtained by the process described in the preceding formula, add finely powdered coffee in place of sugar of milk. One or two tablets of 60 grains will give a good cup of coffee with a cupful of hot water.

**Tea Tablets.**

Tea tablets may be made in a similar way to that given for coffee tablets, using tea in place of coffee.

**Coffee Tablets.**

Coffee tablets may be mixed with powdered chicory extract before pressing. This increases the strength and dark color, but it impairs the flavor.

**Coffee and Tea Tablets.**

Small quantities of powdered vanilla added to the powder for coffee and tea tablets, greatly improve their aroma.

**Cider Vinegar.**

Take 10 gallons new cider and allow it to ferment fully, (in about 2 weeks, if the weather be warm); then add about 8 gallons of new cider for producing a second fermentation, and in about 2 weeks add a like quantity to produce a third fermentation. Stop the bunghole of the barrel with an empty bottle with the neck downward, and expose to the sun. When the cider has turned to vinegar, set in a cool place. In making, maintain a moderate degree of heat and allow free access of external air. The process is hastened by adding to the cider a quantity of "mother of vinegar," or whitish, ropy coagulum, which is formed in vinegar and acts as a ferment. The strength of vinegar depends on the amount of sugar or starchy matter to be ultimately converted into acetic acid. Cider made from late apples is esteemed the best for vinegar.

**Molasses Vinegar.**

Raisins .....	25 pounds
Molasses .....	20 pounds
Acetic acid.....	1 pound

Pour on the mixture 12½ gallons of boiling water, and filter the whole after the acetic fermentation has ceased. If necessary, the vinegar may be run through animal charcoal.

**Raspberry Vinegar.**

Crush perfectly ripe raspberries to a paste, let it stand 24 to 36 hours. Then pour 1 pound of this paste into a jar, pour 1½ to 2 gallons of vinegar over it, place it in a warm place, but not in the sun. Shake frequently. After standing for several days strain through a cloth, add 4 ounces of alcohol, mix thoroughly and filter the vinegar. The bottles should be entirely filled and kept in a cool place.

**Strawberry Vinegar.**

Mash thoroughly ripe strawberries, let the paste stand in a warm place for 24 hours, then press out the juice and let it stand for a few days to ferment and to allow the slimy constituents to separate. Then filter the juice and put in well-closed glass bottles, which should be scrupulously clean, and put in a cool place, where it will keep for a long time. When the fermented juice is to be used for flavoring, add a sufficient quantity of it to good cider vinegar.

**Household Vinegar.**

Cut apple and pear peelings and put them into a jar; pour water over them and also a little vinegar, sour beer or wine. Stir well, cover with a linen cloth and leave in



a warm room. The vinegar will be ready in 2 or 3 weeks.

#### White Wine Vinegar.

Acetic acid.....	16 ounces
Tartaric acid.....	1 ounce
Acetic ether.....	4 drams
White wine.....	16 ounces
Water.....	30 ounces

Mix, let stand 3 days, and filter.

#### Spiced Pickling Vinegar.

Black pepper.....	2 ounces
Ginger.....	2 ounces
Pimenta.....	$\frac{1}{2}$ ounce
Salt.....	1 ounce

Bruise, and set in a warm place in a tightly-covered jar, with 1 quart of vinegar, for 3 days, occasionally shaking. For a more pungent vinegar,  $\frac{1}{2}$  dram of cayenne may be added, and for pickling walnuts, add 1 ounce of shallots.

#### Vanilla Vinegar.

Triturate in a porcelain mortar 4 parts of vanilla bean cut up with some white sugar, add 2 parts each of pulverized cloves and cinnamon, put all in a flask and digest with 30 parts of strong alcohol for several days. Then add 250 to 270 parts of good vinegar, let it stand for some time, shaking it frequently, then strain through a cloth, and finally filter. This vinegar is usually colored red.

#### Vinegar.

Acetic acid.....	2 pounds
Molasses.....	2 quarts
Water.....	20 gallons

Mix and shake. Allow to stand 2 or 3 weeks.

#### Vinegar.

Cider.....	20 gallons
Water.....	10 gallons
Yeast.....	2 gallons

Mix. Ready in 2 weeks.

#### Wine Vinegar.

White wine.....	2 gallons
Water.....	1 gallon
Yeast.....	1 pound

Mix and let stand 2 weeks.

#### Vinegar for French Beans.

Distilled or very pale malt vinegar.....	1 gallon
White peppercorns.....	4 ounces
Bleached ginger, sliced....	2 ounces
Chillies.....	1 ounce

Into  $\frac{1}{2}$  gallon of the vinegar place the whole of the spices and allow to macerate for 12 hours, then simmer (do not boil) gently for 1 hour in an enameled pan, covering the top, and add the remainder of the vinegar. Use hot.

#### Vinegar for Gherkins.

Good malt vinegar.....	1 gallon
Black peppercorns.....	6 ounces
Sliced ginger.....	4 ounces
Chillies.....	1 ounce
Garlic, in slices.....	1 ounce

Boil the spices and garlic gently in half the vinegar for half an hour, strain through a sieve, and add the rest of the vinegar to the spices and again strain. To the remnant spices add 2 ounces of salt and 1 pint of water, and boil for half an hour. After removing from the fire add 1 pint of vinegar, and again strain into the spiced vinegar, which, when perfectly cold, may be poured over the gherkins.

#### Camp Vinegar.

Vinegar.....	$1\frac{1}{2}$ quarts
Walnut catsup.....	$1\frac{1}{2}$ pints
Mushroom catsup.....	2 ounces
Garlic, cut.....	2 ounces
Cayenne.....	$\frac{1}{2}$ ounce
Port wine.....	1 quart
Anchovies.....	1 pound
Salt.....	2 ounces

Mix and put into a bottle; shake daily for 4 weeks and decant.

#### Celery Vinegar.

Ground celery seed.....	$\frac{1}{2}$ ounce
Salt.....	2 drams
Vinegar.....	1 pint

Mix, bring to the boil and set aside for 3 weeks. Decant.

#### Crystal Vinegar.

Any freshly made vinegar of light color, and further decolorized with freshly burnt animal charcoal.

#### Curry Vinegar.

Curry powder.....	$\frac{1}{2}$ pound
Vinegar.....	1 gallon

Mix. Infuse for a week and filter.

#### Distilled Vinegar.

Distill wine vinegar, rejecting the first tenth part and the last tenth part. This greatly improves the flavor.

#### Ginger Vinegar.

Bruised ginger root.....	$\frac{1}{2}$ pound
Vinegar.....	6 quarts

Macerate 6 weeks and strain.

#### Herb Vinegar (Vinaigre aux Fines Herbes).

Horseradish.....	1 ounce
Tarragon leaves.....	1 ounce
Thyme.....	1 ounce
Marjoram.....	1 ounce
Sage.....	1 ounce
Mint.....	1 ounce
Balm.....	1 ounce
Shallots.....	4
Vinegar.....	1 quart

Mix, macerate for 2 weeks and filter. If the herbs are fresh the resulting vinegar should have a green color.

#### Pickling Vinegar.

Ginger.....	1 ounce
Allspice.....	1 ounce
Curry powder.....	2 ounces
Black pepper.....	2 ounces
Capsicum.....	$\frac{1}{2}$ ounce
Mustard seed.....	6 ounces
Vinegar.....	1 gallon

Powder the spices and macerate with the boiling vinegar for a week. Filter.

#### Vinegar for Walnuts.

Good malt vinegar.....	2 gallons
Black peppercorns.....	$\frac{1}{2}$ pound
Ginger, unbleached.....	6 ounces
Mustard seed.....	1 pound
Cloves.....	2 ounces
Mace.....	2 ounces
Garlic, in slices.....	2 ounces

In 1 gallon of vinegar boil the whole of the spices, and, having strained, pour the hot liquor over the walnuts, then boil the remaining gallon of vinegar and pour over spices, etc. To be used hot.

## VARIOUS FOODS.

### Coloring for Culinary Purposes.

Turmeric and saffron for yellow.  
Red sandalwood for reddish-brown.  
Caramel for brown.  
Cudbear for red.

Infusions or tinctures may be made of these coloring agents.

### Bouillon Cubes.

Take good beef, remove the fat, cut the bones in small pieces, and boil the beef with 4 times its weight of water, adding a little salt. Replace the water lost by evaporation. Continue boiling till all the proteids are dissolved. When cold, strain. If necessary, bring the mixture to boiling again, adding the albumen of a few eggs. Allow to settle and decant the clear bouillon. To each pound of bouillon use 1 ounce of fine gelatin. Soak the gelatin on a water bath in a little of the bouillon, heat till dissolved and add to the bouillon, previously warmed. Mix well and set aside in a large flat dish. When cold cut into cubes of convenient size.

### Bouillon Cubes.

If a sufficient quantity of calves' feet are added to the beef in the previous formula, the use of gelatin can be avoided, as there is sufficient gelatin in the calves' feet to gelatinize the bouillon.

### Bouillon Cubes.

Take good extract of beef, dissolve in water and treat the solution with gelatin as in preceding formulas.

### Preserving Eggs.

Lime, 1 bushel (slaked with water); common salt, 2 or 3 pounds; cream tartar,  $\frac{1}{2}$  pound; water, quantity sufficient to form a mixture strong enough to float an egg. Used to preserve eggs, which it is stated it will do for two years, by simply keeping them in it. Simple milk of lime answers quite as well.

### Preserving Eggs.

Melt paraffin at a low temperature and immerse the eggs in it.

### Preserving Eggs.

Sodium silicate (water-glass) ..... 1 pound  
Water ..... 10 pints  
Heat and mix. Immerse the eggs in this liquid and they will keep for years.

### Preserving Eggs.

Salicylic acid..... 1 pound  
Alcohol ..... 5 gallons  
Dissolve. Immerse the eggs in the solution for  $\frac{1}{2}$  hour and dry them in the air.

### Preserving Eggs.

Keep the eggs in cold storage, at a temperature a little above freezing. They will keep indefinitely.

### Preserving Eggs.

Melt 1 pound of beeswax in two pounds of olive oil on a gentle fire. When nearly cool, dip the eggs, one by one, in the solution, and afterward wipe. Eggs treated in this way and packed in powdered charcoal and stored in a cool place will keep for years.

### Preserving Eggs.

A mixture of eight measures of bran and one measure of powdered quicklime makes

an excellent medium for packing and preserving eggs.

### Preserving Eggs.

Coat the eggs with vaseline and keep them in lime water. They will keep well.

### Lard and Tallow Rendering.

Cut the fat into pieces 2 inches square, fill a vessel with the pieces, put in about 4 per cent of weak boiled lye; boil over a slow fire until the cracklings have turned brown, strain and set aside to cool.

### Lard, to Keep Sweet.

When rendering lard, throw into each kettle a handful of slippery elm bark. This is said to keep the lard sweet.

### Bleaching Lard and Tallow.

Melt over a slow fire, add to the lard or tallow  $\frac{1}{5}$  its weight of a mixture of equal parts of kaolin and water. Work up for some time and allow to settle.

### Bleaching Lard and Tallow.

Melt and proceed as directed in the above formula, using freshly burned animal charcoal to bleach.

### Bleaching Lard and Tallow.

Expose the fat to the action of steam at high pressure.

### Powdered Meat.

Raw meat, 250 parts; burnt sweet almonds, 75 parts; bitter almonds, 50 parts; sugar, 80 parts; the whole to be rubbed in a mortar to a homogeneous paste, adding sufficient water from time to time to give a proper consistency for a semi-solid or liquid mixture. In the liquid preparation the meat will settle after a while, but may be dispersed through it by shaking. The preparation may be preserved, bottled and kept in a cool place, and its nutritive value may be increased by adding to it the yolks of 1 or 2 eggs.

### Mincemeat.

Boil well 5 pounds of beef and chop fine. Then add in the order named 1 pound chopped apples,  $\frac{1}{2}$  pound raisins, 1 pound chopped suet, 2 ounces salt and 1 dram each of cinnamon and allspice. Mix well. Then add 1 pound of sugar and 1 quart of boiled cider. Let all come to a boil, stirring thoroughly in the meanwhile with a wooden spoon.

### Mincemeat, Branded.

To the quantity of mincemeat, made according the preceding formula, add 8 ounces of fine French brandy, after the mixture has come to a boil.

### Mincemeat, Flavored.

Various flavors may be used in place of the cinnamon and allspice, such as mace, nutmeg, cloves, citron or candied orange peel. In place of brandy other liquors may also be added.

### Potted Beef.

Beef, free from fat..... 7 pounds  
Ground rice..... $\frac{1}{2}$  pounds  
Powdered capsicum, sufficient.  
Powdered mace ..... 2 drams  
Salt .....  $\frac{1}{2}$  ounce

Mix all roughly together, cooking till the meat and rice are tender. Pass through a mincing machine, and put in pots.

**Potted Hare.**

Beef .....	4 pounds
Rabbit .....	3 pounds
Rice .....	2 pounds
Savoury herbs.....	2 ounces
Cloves,	

Allspice, of each, sufficient.

Remove all fat and bones from the meat and proceed as directed in the formula for "Potted Beef."

**Potted Ham.**

Beef .....	3 pounds
Boiled ham.....	3 pounds
Rice .....	1½ pounds
Flavoring, q. s.	

Mix and proceed as in the above formula.

**Potted Chicken.**

Chicken, free from bones.	5 pounds
Rice .....	2 pounds
Flavoring, q. s.	

Mix and proceed as in the above formula.

**Potted Meat Flavoring.**

To 40 pounds of meat add:

Salt .....	1½ pounds
White pepper.....	3 ounces
Coriander .....	3 ounces
Nutmeg .....	1 dram
Onion .....	¼ ounce

Mix.

**Meat Preserving Powder.**

Common salt.....	1½ pounds
Boric acid.....	1 pound
Sodium sulphite.....	2 pounds

Mix and sift.

**Sausage Seasoning.**

Cayenne .....	1 ounce
Cumin .....	1 ounce
Cassia .....	1 ounce
Nutmeg .....	2 ounces
Pimenta .....	6 ounces
Black pepper.....	8 ounces
Salt .....	8 ounces

Mix.

**Sausage Seasoning.**

Black pepper.....	1 pound
Cloves .....	5 ounces
Nutmeg .....	4½ ounces
Ginger .....	9 ounces
Anise .....	2½ ounces
Coriander .....	2½ ounces

Mix and grind all together.

**Sausage Seasoning.**

White pepper.....	2 ounces
Jamaica ginger.....	6 drams
Black pepper.....	3 drams
Capsicum .....	2 drams
Mace .....	1 dram
Cloves .....	10 grains

Mix and grind all together.

**Sausage Seasoning.**

Celery seed.....	2 drams
Mace .....	1 dram
Nutmeg .....	1 dram
Black pepper.....	2 ounces
Salt .....	2 ounces
Rice .....	6 ounces

Mix and grind all together.

**Sausage Seasoning.**

Capsicum .....	1 ounce
Cumin .....	1 ounce
Cassia .....	1 ounce
Nutmeg .....	2 ounces
Pimenta .....	6 ounces
Black pepper.....	8 ounces
Salt .....	8 ounces

Mix and grind all together.

**Sausage Seasoning.**

Salt .....	2 pounds
Black pepper.....	1 pound
Capsicum .....	½ ounce
Sage leaves.....	4 ounces
Nutmeg .....	1 ounce
Cumin .....	½ ounce

Mix and grind all together.

**Meat Preserver (Barmenit).**

Borax,	
Salt, of each, equal parts.	

Mix.

**Meat Preserver (Berlinit).**

Borax .....	10 ounces
Boric acid.....	1 ounce
Common salt.....	6 drams

Mix.

**Meat Preserver.**

Take ½ pound Barmenit to 100 pounds of meat and apply by means of a fine sieve.

**Meat Preserver.**

Chopped meat, as well as sausage meat, may be preserved by applying ½ pound of "Berlinit" to 100 pounds of meat.

**Meat Preserver.**

Dressed poultry is rubbed with "Barmenit" inside, and some of it introduced into the throat.

**Meat Preserver.**

Roast meat and fish may be kept fresh by adding to every 4 ounces of salt 1 ounce of "Barmenit."

**American Ham Preserver.**

Alum .....	8 ounces
Nitre .....	3 ounces
Water .....	1 gallon

Mix, dissolve and apply.

**Mince Pie Filling.**

Use the same formula for mincemeat, chopping the ingredients finer.



# PART NINE.

## Miscellaneous Formulas, Processes, Etc.

### INKS.

#### INKS.

##### Ink, Black.

Calcined iron sulphate.... 1 ounce  
Gallnuts .....1½ ounces  
Vegetable gum..... ½ ounce  
Distilled water..... 1 pint  
Mix, and digest until dissolved.

##### Ink, Black.

The ink obtained by the following process becomes black at once, does not corrode the pen, and, when thick, can be diluted with water.

Convert into a coarse powder ½ ounce of gallnuts, and ¼ ounce of gum arabic, and ¾ pint of rain water. Let the whole stand in a flask for 24 hours, shaking it several times. Then add 7 grains of ferric oxide prepared in the following manner: Place 4 ounces iron sulphate in an earthenware pot, and heat it over a strong fire until it forms a red mass, when it is allowed to cool and is stored away for future use. To prevent molding of the ink, add a few drops of creosote, or a few grains of corrosive sublimate.

##### Ink, Black.

Convert into a coarse powder 1 pound of gallnuts, ¾ pound iron sulphate, and 3½ ounces of gum arabic. Pour over these ingredients 1 quart of vinegar and 1¾ gallons of water. Let the mixture stand for 8 to 14 days, stirring frequently, and then pour off the ink.

##### Ink, Black.

Iron sulphate..... 1 ounce  
Logwood ..... 1 ounce  
Gallnuts .....3½ ounces  
Gum arabic ..... 1 ounce

Pulverize each separately, mix, and add:  
White wine (or acetic acid) ..... 1 quart  
Mix.

##### Ink, Black.

Pulverized gallnuts..... 100 parts  
Iron sulphate..... 250 parts  
Gum arabic..... 200 parts  
Water .....6,000 parts  
Creosote, a few drops.

Mix.

##### Ink, Black.

Digest for 8 days 16 parts of bruised Aleppo gallnuts, 16 of iron sulphate, 5 of gum senegal, and 1 of alum in 216 of vinegar; then add to the whole 36 parts more of vinegar and 200 of water.

##### Ink, Black.

Boil repeatedly 160 parts of logwood with water. Pour the different decoctions together and reduce them by evaporation to 1,000 parts by weight. Dissolve in this liquid 1 part of neutral yellow potassium chromate, let it

clear by standing, and draw the clear ink into bottles, which should be hermetically closed. This is a cheap and good ink, which flows freely from the pen, but spoils quickly if allowed to stand in open vessels.

##### Ink, Black.

Extract of logwood..... 15 parts  
Sodium carbonate, crystallized ..... 4 parts  
Neutral potassium chromate ..... 1 part  
Water .....1,000 parts

Dissolve the extract in 900 parts of the water, allow it to deposit, decant, heat to boiling, and add the sodium carbonate; lastly, dissolve the potassium chromate in the remainder of the water, and add to the logwood solution drop by drop with constant stirring.

##### Ink, Black.

Nigrosin .....160 grains  
Distilled water..... 16 ounces  
Mix and dissolve.

##### Ink.

Boil 250 parts of pulverized gallnuts, 125 parts of gum, and a like quantity of sulphuric acid in 4,000 parts of distilled or rain water, and add a few grains of mercury chloride.

##### Ink, Black.

Logwood chips..... 1 pound  
Boil in 1½ gallons of water until reduced to 2 quarts. Pour off and repeat as before. Mix, and add water to make 1 gallon in all; then add potassium bichromate, ½ ounce; Prussian blue, ½ ounce; potassium prussiate, ¼ ounce. Boil again 5 minutes, then strain and bottle.

##### Black Ink for Writing on Leather.

###### A.

Nutgalls ..... 10 parts  
Gum arabic ..... 1 part  
Water .....100 parts

###### B.

Ferrous sulphate..... 1 part  
Gum arabic..... 2 parts  
Indigo carmine..... ½ part  
Water ..... 10 parts

Apply Solution A to the portion of the leather to be written on, and when dry write with Solution B. The writing produced in this manner has a beautiful black color and penetrates deeply into the leather, especially if the lower side of it has been thoroughly moistened.

##### Nutgall Ink.

Powdered gallnuts..... 16 parts  
Gum arabic..... 8 parts  
Cloves, in powder..... 1 part  
Iron sulphate..... 10 parts

Place in an earthen or glass vessel and add 100 parts of rain water, and let it stand for eight to fourteen days, with frequent agitations. At the expiration of the time

mentioned, decant for use. It is improved by the addition of from 2 to 6 parts of Campeachy wood. One great advantage of this ink is that it can be thinned with water at any time without injury, and that it can be converted into a copying ink by the addition of 4 parts of glucose.

#### **Ink, Extemporaneous Black.**

Tannic acid.....	312 grains
Powdered acacia.....	2½ drams
Pyrogalllic acid (Scher- ing's) .....	16 grains
White sugar.....	1 dram
Iron sulphate (best).....	2½ drams
Distilled water.....	1 pint
Creosote (Morson's from wood tar).....	2 drops

The quantity of acacia can be diminished if a freer flowing ink is desired.

The creosote should be shaken into the ink, not dissolved in alcohol, as is sometimes advised.

#### **Copying Ink, Black.**

Nutgalls .....	6 ounces
Alum .....	¼ ounce
Brazil wood.....	½ ounce
Sugar .....	½ ounce
Sour beer.....	1 gallon

Infuse this mixture for 24 hours in a glazed earthenware vessel, frequently stirring it; raise to boiling temperature, and boil down to two-thirds of its original volume. Strain and add 1½ ounces powdered iron sulphate. Let it stand some days in the sun, and afterward bottle.

#### **Copying Ink, Black.**

Boil 33 parts each of coarsely powdered gallnuts, extract of logwood, and bruised tormentil root in 500 parts of water, and strain the fluid. Next dissolve 180 parts of iron sulphate and 33 parts of alum in 250 parts of water; add this solution to the above fluid, and dissolve in it by boiling 1 dram of indigo carmine, 1 ounce of gum arabic and 2½ ounces of white sugar.

#### **Copying Ink, Black.**

Rain water.....	2 gallons
Gum arabic.....	¼ pound
Brown sugar.....	¼ pound
Clean copperas.....	¼ pound
Powdered nutgalls.....	¼ pound

Bruise all and mix, shaking occasionally for 10 days, and strain. If needed sooner, let it steep in an iron kettle until the strength is obtained.

#### **Beau's French Copying Ink.**

Consists of 1,650 parts by weight of beer, 95 of nutgalls, 30 of gum arabic, 40 of calcined iron sulphate, 20 of tormentil root, 10 of lampblack, 10 of rock candy, 60 of white sugar, and 5 of honey.

#### **Blue-Black Writing Ink.**

Tannic acid.....	200 grains
Gallie acid.....	50 grains
Iron protosulphate.....	1 ounce
Indigo carmine (neutral).....	320 grains
Powdered cloves.....	5 grains
Water .....	1 pint

Dissolve the tannic and gallic acids in water. To this solution add the iron salt, and filter through cotton. Then add the indigo carmine, and lastly the cloves. One good copy can be obtained from this ink.

#### **Blue Writing Fluid.**

Dissolve basic or soluble Prussian blue in pure water. This is the most permanent

and beautiful ink known. It is not affected by the addition of alcohol, but is immediately precipitated by saline matter. The precipitate, however, still possesses the property of dissolving in pure water.

#### **Alizarin Ink.**

Indigotin .....	6 parts
Pure water.....	388 parts
Sugar .....	20 parts
Solution of iron tersul- phate .....	62 parts
Ink body (see below)....	600 parts

Dissolve the indigotin by one day's maceration in water. Then add sugar and tersulphate of iron and lastly the ink body, which is prepared as follows: Macerate 200 parts of coarsely powdered Chinese galls for 24 hours with 750 parts of distilled water, strain and express. Upon the residue pour 350 parts of boiling water and express after one hour. Triturate 50 parts of white bole with the mixed, strained liquids, filter through flannel bags. Wash the latter with water until the weight of the filtrate is 1,000 parts.

In place of the ink body a solution of 60 parts of tannic acid in 540 parts of water may be used.

#### **Green Ink.**

Verdigris .....	2 ounces
Cream tartar.....	1 ounce
Water .....	8 ounces

Mix, boil to one-half, and filter.

#### **Green Ink.**

Dissolve 180 grains potassium dichromate in 1 fluid ounce of water; add, while warm, ½ ounce alcohol, then decompose the mixture with concentrated sulphuric acid until it assumes a brown color; evaporate this liquor until its quantity is reduced to one-half; dilute it with 2 ounces distilled water; filter it, add ½ ounce alcohol, followed by a few drops strong sulphuric acid; it is now allowed to rest, and after a time it assumes a beautiful green color. After the addition of a small quantity of gum arabic, it is ready for use.

#### **Black Ink.**

Methyl violet.....	1½ drams
Bengal green.....	2½ drams
Bismarck brown.....	1 dram
Acacia .....	1 dram
Water .....	4 fl. ounces

Mix and dissolve.

#### **Black Ink.**

Tannic acid.....	1 ounce
Pyrogalllic acid.....	½ dram
Iron lactate .....	1 ounce
Iron sulphate .....	1 ounce
Pyoktanin .....	½ dram
Tartaric acid.....	1 ounce
Warm water.....	6 pints

Mix, shake and dissolve. Set aside a few days strain and add 1½ ounces of fresh mucilage.

#### **Black Ink.**

Nutgalls, freshly ground..	11 ounces
Iron sulphate, pure.....	2 ounces
Indigo solution.....	1 dram
Water .....	1 quart

Mix, allow to stand a few days and strain, adding water through the strainer to make 1 quart.

#### **Blue Ink.**

Resorcin blue.....	1 dram
Sugar .....	4 drams
Oxalic acid.....	12 grains
Distilled water.....	1½ pints

Mix and dissolve.

**Blue Black Ink.**

Bruised nutgalls..... 4 ounces  
 Iron sulphate.....1½ ounces  
 Gum acacia.....1½ ounces  
 Vinegar .....1½ ounces  
 Indigo carmine ..... ½ dram  
 Water, enough to make... 1 quart

Mix, allow to stand for 14 days and strain.

**Brown Ink.**

To a strong decoction of catechu (1:10) add a weak solution of potassium dichromate.

**Gold Ink.**

Mix equal parts of honey and goldleaf and triturate till the gold is reduced to powder. Agitate with hot water, allow to settle and decant, repeating the operation several times. Mix the clean gold powder with a weak solution of gum acacia.

**Red Ink.**

Ammonia water..... 1 dram  
 Gum arabic..... 4 grains  
 Carmine, No. 40..... 6 grains  
 Carmine, No. 6 or 8..... 5 grains  
 Soft water, enough to make ..... 1 ounce

Dissolve the carmine in the ammonia water, and the gum in the water. Mix.

**Red Ink.**

Carmine, No. 40..... 30 grains  
 Ammonia water..... 1 dram  
 Acacia ..... 6 grains  
 Water, enough to make... 1 ounce

Dissolve the carmine in the ammonia water, and add the other ingredients.

The depth of tint may be varied by the use of more or less water.

**Red Ink.**

Half a dram of powdered drop lake and 18 grains powdered gum arabic, dissolved in 3 ounces ammonia water, make one of the finest red or carmine inks.

**Red Ink.**

Brazil wood..... 2 ounces  
 Tin chloride..... ½ dram  
 Gum arabic..... 1 dram  
 Water ..... 32 ounces

Mix, boil down to one-half, and strain.

**Red Ink.**

Saffranin ..... 1 ounce  
 Glycerin ..... 20 ounces  
 Alcohol ..... 20 ounces  
 Acetic acid..... 20 ounces  
 Gum acacia ..... 4 ounces  
 Water, enough to make... 4 gallons

Dissolve the saffranin in the warm glycerin, add the alcohol and acetic acid, and the water in which the gum has been dissolved.

**Red Ink.**

Rub fine 6 parts of red carmine with 75 parts of liquid waterglass. Dilute this mixture with 675 parts rain water. Let it stand a few days, and pour off the fluid.

**Red Ink.**

Best ground Brazil wood, 4 ounces; diluted acetic acid, 1 pint; alum, ½ ounce. Boil slowly 1 hour in covered enameled dish, strain, and add ½ ounce gum.

**Red Ink.**

An excellent red ink is obtained by grinding carmine with a solution of potassium silicate in a porcelain mortar. The ink,

which should be preserved in a well-closed bottle provided with an oiled stopper, is said to dry very rapidly and leave a brilliant appearance.

**Red Ink.**

Carmine, No. 40..... 30 grains  
 Ammonia water..... 1 fl. dram  
 Acacia ..... 6 grains  
 Water, sufficient to make. 1 fl. ounce

Dissolve the carmine in the ammonia water, and add the other ingredients.

**Red Ink.**

Boil 4 ounces Pernambuco wood with 16 ounces dilute acetic acid and an equal quantity of water until 24 ounces remain; add 1 ounce alum and evaporate to 16 ounces; add 1 ounce gum arabic, strain, cool, and lastly add 1 dram tin protochloride.

**Red Ink.**

Boil 2 ounces Brazil wood, ½ ounce alum and ½ ounce cream of tartar in 16 ounces rain water till reduced one-half, strain and dissolve in it ½ ounce gum arabic, and add a tincture made with ½ drams cochineal in 1½ ounces alcohol.

**Red Ink.**

Triturate 1 dram cochineal and 1 dram potassium carbonate with a little boiling water; add 1 dram burnt alum and 2 drams cream tartar, and water to bring to desired color.

**Red Ink.**

Patent.—Take common sodium, potassium or ammonium carbonate, and add to it at intervals twice its weight of crude argols in powder; when effervescence has ceased, decant or filter; add to it next, by measure, half the quantity of aluminum oxalate, prepared by adding to precipitated alumina in a damp state as much oxalic acid as will dissolve it. Into this mixture, when cold, put as much powdered cochineal as will give it a fine red color; let stand 48 hours, then strain for use.

**Red Ink.**

Dissolve 1 part soluble diamond fuchsine in 150 to 200 parts hot water.

If an addition of gum is required (seldom necessary), 1 part dextrin may be added to 100 parts of ink but never gum arabic.

**Red Ink.**

Erythrosin ..... 1 dram  
 Water ..... 12 ounces  
 Boric acid..... 10 grains  
 Gum acacia..... 2 drams

Mix and dissolve.

**Red Copying Ink.**

Fuchsine ..... ½ ounce  
 Water ..... 30 ounces  
 Glycerin ..... ½ ounce

Dissolve the fuchsine in the water; then add the glycerin.

**To Write in Silver.**

Finest pewter of block tin, 1½ ounces; quicksilver, 3 ounces. Mix until both become fluid, grind with gum water, and write with it. The writing will appear as if done with silver.

**Silver Ink.**

Silver foil and potassium sulphate are triturated in a mortar till finely divided. Wash the salt out with water and mix the pure silver powder with a weak solution of acacia.



**Silver Ink.**

Make as gold ink but use silver leaf or silver bronze powder.

**Silver Ink.**

Zinc oxide.....	30 grains
Mucilage.....	1 ounce
Alcohol.....	40 drops
Silver bronze powder.....	3 drams

Rub together the zinc and mucilage, and the silver bronze powder and alcohol, and combine the two mixtures; then add enough water to make 2 ounces.

**Violet Copying Ink.**

Methyl-violet.....	½ ounce
Water.....	16 ounces
Glycerin.....	½ ounce

Dissolve the violet in the water and add the glycerin.

A few drops of creosote should be added to make the ink keep.

**Violet Copying Ink.**

Extract of logwood,	
French, extra fine.....	100 parts
Ammonium oxalate.....	30 parts
Ammonium sulphate.....	30 parts
Oxalic acid.....	8 parts
Potassium dichromate.....	1 part
Salicylic acid.....	1 part
Pure water, q. s.	

Reduce the first four ingredients to a coarse powder and heat the mixture with 800 parts of water to boiling in a copper vessel. Then add a solution of potassium dichromate in 150 parts of hot water; next add the salicylic acid, and set the whole aside for 14 days. Pour off the clear liquid and put it in ¼ or 1-pound bottles. In thin layers this ink has a fine red tint and writes with a violet-red color, which copies dark violet, and also assumes the last-mentioned shade when drying. It is one of the best copying inks in existence. Writing done by it can be copied many weeks afterwards.

**White Ink.**

Chinese white, rubbed up with gum arabic water. If for blue paper, use a solution of oxalic acid (poison), using a gold or quill pen. This last is an excellent method of writing white on blue, and gives a permanent, inefaceable record.

**Yellow Ink.**

Gamboge, pulverized.....	1 ounce
Hot water.....	5 ounces
Dissolve, and when cold, add:	
Alcohol.....	½ ounce

**Yellow Ink.**

Boil French berries, ½ pound, and alum, 1 ounce, in rain water, 1 quart, for half an hour or longer, then strain and dissolve in the hot liquor gum arabic 1 ounce.

**Vanadium Ink.**

Dissolve 10 parts of tannic acid in 100 parts of water, and 0.4 part of ammonium vanadate in ten parts of water. Mix the two solutions and shake moderately. This ink flows with a deep black color from the pen, without spreading or striking through the paper, although it contains no gum. It has a pleasant gloss, cannot be copied, dries quickly, and even if the writing is laid in water for twenty-four hours, does not change its black color. It is very useful for writing addresses of letters, postal cards, etc., when used fresh. Dilute acids do not alter it, but solutions of chlorinated potassa (or soda)

bleach it completely. After a few weeks the tint of the ink begins to change, writing executed with it becomes lighter and somewhat yellowish, and in about three months the change is completed, when it has a foxy yellow tint. The writing is still plainly legible, however, and cannot be removed either by water or acids.

**Indelible Ink.**

Aniline black.....	1 dram
Strong hydrochloric acid.....	60 drops
Alcohol.....	6 drams

Dissolve, and add a hot solution of 1½ drams gum arabic in 3 ounces of water.

**Indelible Ink.**

Silver nitrate.....	50 grains
Tartaric acid.....	40 grains
Carmine, No. 40.....	5 grains
Ammonia water.....	½ ounce
Mucilage of gum arabic.....	½ ounce

Dissolve the silver nitrate in the ammonia water, and add the tartaric acid; then rub the carmine with the solution. Lastly, add the mucilage. This ink is red when first written with; on the application of heat it soon changes into black.

**Indelible Ink.**

Silver nitrate.....	1 ounce
Sodium carbonate.....	1½ ounces
Tartaric acid.....	60 grains
Ammonia water.....	6 ounces
Refined sugar.....	6 drams
Powdered gum arabic.....	10 drams
Distilled water, a sufficient quantity.	

Dissolve the silver nitrate and the sodium carbonate separately in sufficient water, mix the solutions, collect and wash the precipitate and rub it while moist with the acid until effervescence ceases. Then dissolve the precipitate and the sugar and gum in the ammonia water, adding enough water to make 8 ounces.

**Indelible Ink.**

Toluidine.....	1 dram
Aniline oil.....	3 ounces

Dissolve and add.

Hydrochloric acid.....	6 ounces
Mucilage.....	6 ounces

Mix.

**Indelible Ink.**

Mix 50 grams aniline oil (containing more or less toluidine), 25 Cc. water, 25 Cc. hydrochloric acid, heat in a flask on a water bath, to complete solution. Then add 10 grams copper chloride, and heat to boiling point. The mixture will gradually assume a violet color, and there should then be added about 15 Cc. of hydrochloric acid and 10 grams potassium dichromate, alternately, in small portions. If the effervescence becomes too violent, remove the heat. Finally, add 10 to 15 Cc. hydrochloric acid to dissolve any coloring matter that may have separated. Filter the solution, and the ink is completed and ready for use.

**Indelible Ink.**

Make a solution of 4 parts aniline hydrochloride and 10 parts gum arabic in 10 parts of glycerin and 40 parts of water. Make another solution of 15 parts of copper chloride, 10 parts ammonium chloride, 20 parts sodium chloride in 100 parts of water. To use, mix 5 parts of the first solution with one part of the second and apply to the unsized linen, and later expose to steam for some time.

**Red Indelible Ink.**

Make three solutions thus:

(a.) Dissolve 3 drams of sodium carbonate

and gum arabic in 12 drams of water.

(b.) Dissolve 1 dram platonic chloride in 2 ounces of water.

(c.) Dissolve 1 dram stannous chloride in 4 drams distilled water.

Moisten the place to be written upon with solution (a) and dry with a warm iron. Then write with (b), and when dry moisten with solution (c).

#### Red Indelible Ink.

Italian marking ink is made by dissolving 1 part of gold chloride (or better, chloride of gold and sodium) in 10 parts of water, and when the solution is to be used a small portion of it is mixed with an equal quantity of mucilage. The fabric is to be previously treated with a solution of 1 part stannous chloride and 10 parts gum arabic in 100 parts water, dried and ironed. After writing with the ink, expose the fabric to gentle heat, and when the writing has become of a handsome red, wash the place repeatedly with water.

Always use clean pens, preferably of gold or quill.

#### Indelible Ink for Stamps.

Sodium carbonate.....	2¼ ounces
Glycerin .....	8½ ounces
Gum arabic, in powder...	2 ounces
Silver nitrate.....	1 ounce
Ammonia water.....	2 ounces
Venice turpentine.....	1 ounce

Triturate the sodium carbonate, gum arabic and glycerin together. In a separate flask dissolve the silver nitrate in the ammonia water, mix the solution with the triturate, and heat to boiling, when the turpentine is to be added with constant stirring. After stamping, expose to the sunlight, or use a hot iron. The quantity of glycerin may be varied to suit circumstances.

#### Indestructible Ink.

Graphite, powder.....	10 ounces
Gum copal.....	16 ounces
Iron sulphate.....	1 ounce
Tincture of galls.....	1 ounce
Indigo sulphate.....	3 ounces

Mix and boil with sufficient water to make a liquid of desired consistency. Let stand and settle. Decant the liquid.

#### Invisible Ink.

Cobalt oxide.....	¼ ounce
Hydrochloric acid, sufficient to dissolve it.	
Water .....	4 ounces
Mucilage of acacia.....	1 dram

Mix. Characters written on paper with this solution are invisible, but on the application of heat they instantly appear in blue. On cooling they again become invisible.

#### Sympathetic Ink for Postal Cards.

An ink particularly recommended for writing on postal cards is made of diluted sulphuric acid, one part by measure of acid to seven parts of water. When this ink is used the card will at first show roughened traces of the writing, but after being allowed to dry for a short time, these disappear, and it is as invisible as if done with water. Of course, only a gold or quill pen must be used. To avoid the suspicion of being sympathetic ink, the card may be written upon, across the first writing, with tincture of iodine, which will entirely fade out when the heat is applied to develop the invisible ink.

#### Paper for Inerascable Writing.

To prevent alterations in writing, the following process of preparing paper has been recommended: Add to the sizing five per

cent of potassium cyanide and antimony sulphide, and run the sized paper through a thin solution of manganese or copper. Any writing on this paper with ink made from nutgalls and sulphate of iron can neither be removed with acids nor erased mechanically. Any acids will change immediately the writing from black to blue or red. Any alkali will change the paper to brown. Any erasure will remove the layer of color and the white ground of the paper will be exposed, since the color of the size is only fixed to the outside of the paper without penetrating it.

#### Sympathetic Ink.

A weak solution of copper nitrate gives an invisible writing, which becomes red through heat.

#### Sympathetic Ink.

A very dilute solution of copper perchloride gives invisible characters that become yellow through heat.

#### Sympathetic Ink.

Solution of cobalt chloride or nitrate; turns green when heated, and disappears again on cooling. If the salt is pure, the marks turn blue.

#### Sympathetic Ink.

Onion juice; will become yellow when exposed to the heat.

#### Sympathetic Ink.

Solution of lead acetate; turns brownish black when exposed to the fumes of sulphuretted hydrogen.

#### Marking Ink for Packages.

Take lampblack and mix thoroughly with sufficient oil of turpentine to make it thin enough to flow from the brush. Powdered ultramarine, instead of lampblack, makes a fine blue marking mixture for the same purpose.

#### Marking Ink for Packages.

An excellent and very cheap ink is made by mixing ¼ ounce potassium dichromate and 4 ounces extract of logwood in a stone jar or demijohn with 2 gallons of hot water. Shake well and let it stand for about two weeks, shaking occasionally.

#### Ink for Writing on Glass.

By rubbing up equal parts of lampblack and iron scale (hammer scale) with strong gum mucilage an ink is obtained which can be used for writing on glass.

#### Ink for Typewriter Ribbons.

Put into an ordinary glue pot some best quality of petrolatum and melt it by standing the gluepot on a fire, then put in as much lampblack or powdered dropblack as the petrolatum will take up without becoming granular. To effect this incorporation the black pigment should be put in a little at a time and the whole thoroughly stirred while making the additions. Be careful not to let the petrolatum remain in excess, for if this is done, the print is liable to have a greasy outline; while, on the other hand, if the pigment be in excess, the print will not be clear.

When a proper mixture of petrolatum and pigment has been made, take the vessel from the fire, and while it is cooling mix equal parts of petroleum benzine and rectified oil of turpentine, and in this mixture put the black petrolatum compound, mixing in a little of the other with constant stirring, so as to effect a thorough combination, and the petrolatum compound becomes dissolved. The quantity of the volatile solvent should be suffi-

cient to render the fluid ink of the consistence of oil paint. This method produces a good permanent black ink, which will not be rubbed off with water like aniline inks. For colored inks of this class use Prussian blue, red le d, chrome yellow.

For inks of the aniline class use these dyes dissolved in equal parts of alcohol and concentrated glycerin; thus for a black aniline ink dissolve one-half ounce of aniline black in thirteen ounces alcohol and then add the glycerin. Ink the ribbon in the usual way. Having prepared the ink proceed to ink the ribbon; the secret of success lies in the proper application of the ink to the ribbon thus: Wind the ribbon on a piece of cardboard, spread on a table several layers of newspapers, then unwind the ribbon in such lengths as may be most convenient and lay it flat on the paper; apply the ink, after well shaking it, by means of a soft brush, and rub it well into the interstices of the ribbon with a toothbrush; hardly any ink should remain visible on the surface.

#### Ink for Writing on Photographs.

Potassium iodide.....	10 parts
Water .....	30 parts
Iodine .....	1 part
Gum .....	1 part

The lines should bleach under the strokes by the conversion of the silver into iodide. This ink answers very well for numbering and marking photographic proofs, the writing being executed on a dark portion.

#### Ink for Travelers.

Saturate white blotting paper with a strong solution of one of the aniline dyes, black, navy blue, scarlet or violet; a little gum should be put in the solutions. While still wet press three or four sheets together to form a pad; then dry. A small square cut off and put in a little water makes ink in a few minutes.

#### Typewriter Ink.

Aniline black.....	½ ounce
Alcohol .....	15 ounces
Concentrated glycerin....	15 ounces

Dissolve the aniline black in the alcohol, and add the glycerin.

#### Typewriter Ink.

Many of the salts of the aniline series are soluble in castor oil; methyl-violet is especially so, and advantage can be taken of this fact to prepare typewriter ink of remarkable power, admitting of a large number of copies being taken from the same impression. The incorporation and solution of the aniline in the oil can be effected on the small scale by triturating the previously powdered pigment with the oil in a mortar, the operation being sometimes facilitated by the addition of a little alcohol. Various colored inks for stamping pads might be produced in the same way.

#### Typewriter Ink.

Blue aniline, oil-soluble..	1 dram
Oleic acid.....	2 drams
Castor oil.....	4 ounces

Mix the dye with the oleic acid and incorporate the oil, then warm gently.

#### Typewriter Ink, Red.

Aniline red, oil-soluble...	1 dram
Bordeaux red, oil-soluble.	1 dram
Oleic acid.....	3 drams
Castor oil, enough to make	8 ounces

Rub the dyes with the acid and gradually add the oil. Heat to about 110° F., stirring constantly.

#### Typewriter Ink, Violet.

Aniline violet.....	1 dram
Oleic acid.....	2 drams
Castor oil.....	4 ounces

Prepare as directed in the preceding formula.

#### Typewriter Copying Ink.

Transparent soap.....	1 ounce
Glycerin .....	4 fl. ounces
Water .....	12 fl. ounces
Alcohol .....	24 fl. ounces
Aniline dye, sufficient.	

Dissolve the soap in the glycerin by the aid of heat; dissolve the aniline in the alcohol and mix the two solutions. If the ink is too soft, add more soap.

#### Ink for Writing Upon Zinc and Tin.

Potassium chlorate.....	60 parts
Copper sulphate.....	120 parts
Aniline blue (water-soluble) .....	1 part
Acetic acid.....	100 parts
Pure water, quantity sufficient.	

Dissolve the potassium chlorate and copper sulphate in 1,400 parts of water, and dissolve the aniline blue in 400 parts of water, and add to it the acetic acid. Then mix the solutions. Upon zinc this ink is applied directly by writing with a steel pen. If to be used on tin or tinned iron, first free it from grease by ether, then rub over with a solution of equal parts zinc chloride and hydrochloric acid. Of course, to write with this ink upon any surface the latter must be thoroughly clean.

#### Stencil Inks.

An excellent stencil ink for boxes and packing cases can be made by mixing lamp-black, fine clay and gum arabic together. The lampblack gives the color, the clay furnishes a body, and the gum an adhesive. Water will answer as a solvent, but lamp-black is so light that a few drops of vinegar or other acid will facilitate its admixture with the other ingredients. Any good adhesive substance, such as dextrin or gum tragacanth, may be found to answer as well as gum arabic to bind the mixture.

#### Stencil Inks.

Take of shellac, 2 ounces; borax, 2 ounces; water, 25 ounces; gum arabic, 2 ounces; and of Venetian red a sufficiency. Boil the borax, shellac and some water until they are dissolved; add the gum arabic and withdraw it from the fire. When the solution has become cold, complete to 25 ounces with water, and add more red to bring it to a suitable consistency.

#### Colored Stencil Inks.

Shellac .....	4 parts
Borax .....	1 part

Dissolve in a small quantity of boiling water and dilute with hot water to the consistency of a very thin syrup; to this add a sufficient quantity of logwood, or Brazil wood extract, or soluble coal tar reds, for red. For blue add to the lac solution soluble Prussian blue or blue carmine.

#### Ink for Rubber Stamps.

Aniline (violet or crimson)	1 part
Water .....	4 parts
Methylic alcohol.....	4 parts
Dissolve, then add:	
Treacle .....	1 part
Glycerin .....	1 part

Mix.



**Oily Stamp Inks.**

Blue:

Ultramarine ..... 1 ounce  
Olive oil..... 3 ounces

Reduce the ultramarine to an impalpable powder, and mix with the olive oil.

Blue:

Paris blue..... 2 drams  
Ultramarine ..... 1 dram  
Olive oil..... 2 ounces

Mix the solids, and when reduced to an impalpable powder, gradually add the olive oil, with constant stirring.

Green:

Verdigris ..... 5 drams  
Oleic acid..... 1 dram  
Olive oil..... 2 ounces

Rub the verdigris to a very fine powder, mix the oleic acid with it, and after a few minutes the olive oil.

Red:

Vermilion ..... 2 ounces  
Olive oil..... 3 ounces

Prepare as above.

Black:

Gas black..... 1 ounce  
Olive oil..... 6 ounces

Prepare as above.

All of these inks should be well shaken before pouring on the pad.

**Glycerin Stamp Ink.**

Aniline water-blue 1 B... 1 dram  
Distilled water..... 3 drams  
Wood vinegar..... 3 drams  
Rectified spirit..... 3 drams  
Glycerin ..... 3 ounces

Mix. Make a solution by rubbing in a mortar.

In the same way, and with the same compound basis, are prepared the following:

Violet:

Methyl-violet, 3 B..... 40 grains

Red:

Diamond fuchsine I..... 40 grains

Green:

Aniline green, D..... 80 grains

Brown:

Vesuvius B..... 100 grains

Black:

Deep black, E..... 1 dram

For bright red, omit the vinegar from the solutions, replacing it by water, and using 1 dram of eosin BB N.

All the liquids in the formulas are to be taken by weight.

**Black Ink for Rubber Stamps.**

Dissolve 100 parts of tannin black in a mixture of 100 parts of water and 200 parts of glycerin, by the aid of the sand bath and constant agitation until complete solution is effected. A syrupy-like liquid is thus formed, which may be used without further addition, and which keeps indefinitely without alteration.

**Show Card Ink.**

Pure asphaltum..... 16 ounces  
Venice turpentine..... 18 ounces  
Lampblack ..... 4 ounces  
Oil of turpentine..... 2 quarts

Dissolve and mix thoroughly.

**Show Card Ink, Red.**

Rosaniline acetate..... 2 parts  
Alcohol ..... 1 part  
Water ..... 10 parts  
Glycerin ..... 1 part

Mix and dissolve.

**Show Card Ink, Red.**

Bordeaux red..... 3 parts  
Alcohol ..... 2 parts  
Water ..... 20 parts  
Glycerin ..... 1 part

Mix and dissolve.

**Show Card Ink, Violet or Blue.**

Aniline violet or blue (2  
R.B. to 3 B.)..... 1 ounce  
Hot water..... 7 fl. ounces  
Dissolve and allow to cool, then add:  
Alcohol ..... 4 fl. ounces  
Glycerin ..... 2 fl. drams  
Ether ..... 5 drops  
Carbolic acid..... 1 drop

Mix well.

**Ink for Window Display Cards.**

For ease of manufacture and general utility there is nothing to equal the ordinary water-soluble aniline dyes. A little experimenting with these dyes is first necessary to ascertain the quantity required to produce the particular shades wanted. The solution of dye may be thickened with sugar and mucilage of acacia.

**Eosin Red Ink for Window Display Cards.**

Eosin B..... 1 dram  
Solution of mercuric chloride ..... 2 drams  
Mucilage of acacia..... 2 drams  
Rectified spirit..... 4 ounces  
Oil of lavender..... 1 drop  
Distilled water, to..... 4 ounces

Dissolve the eosin in the solution and 2 ounces of water, add the mucilage, and mix, then the oil dissolved in the spirit, and finally make up.

**Blue Ink for Window Display Cards.**

Resorcin blue..... 1 dram  
Distilled water..... 6 drams

Mix and agitate occasionally for two hours, then add:

Hot distilled water..... 24 ounces  
Oxalic acid..... 10 grains  
Sugar ..... ½ ounce

Shake well. This and other aniline inks can be perfumed by rubbing up a drop of otto of rose with the sugar before dissolving it in the hot water.

**Orange Ink for Window Display Cards.**

Aniline orange..... 1 dram  
Sugar ..... 2 drams  
Distilled water..... 8 ounces

Mix and dissolve.

**Ink for Copying Without Pressure.**

Extract of logwood..... 1 ounce  
Sodium carbonate, crystals 2 drams  
Neutral potassium chromate ..... 15 grains  
Gum acacia..... 2 drams  
Glycerin ..... 1 ounce  
Distilled water, q. s.

Place the extract, in coarse powder, in a porcelain capsule with the sodium carbonate, add 8 fluid ounces distilled water and heat until the extract is all dissolved and the solution acquires a deep red color. Remove from the heat and add the glycerin, and then the potassium chromate and acacia, each previously separately dissolved in a little water.

**Document Ink.**

Solution of ferric sulphate (U. S. P.).....	44 parts
Sodium sulphate (crystals) ..	20 parts
Sugar .....	20 parts
Ink body.....	500 parts
Aniline blue (water-soluble) .....	4 parts
Pure water, q. s.	-

Dissolve the sodium sulphate in 242 parts of water, add the solution of ferric sulphate and the sugar, and when the latter is dissolved, add the ink body. Lastly, add the aniline blue, dissolving in 200 parts of water. In place of the ink body, a solution of 50 parts of tannic acid in 450 parts of water may be added. Let the ink stand eight days, then pour off the clear liquid. This ink writes with a fine blue.

**Non-Freezable Ink.**

Black aniline.....	4 grams
Hydrochloric acid.....	5 grams
Alcohol .....	4 fl. drams
Glycerin .....	10 grams
Water .....	2 fl. drams

Make the aniline into a paste with the acid and add the alcohol to form a solution. Mix the glycerin and water and heat it before adding the first solution. If the ink is not kept in well-stoppered vials, the alcohol will evaporate.

**Pharmaceutical Ink.**

Alizarin paste.....	15 grams
Sodium carbonate.....	7 grams
Extract of logwood.....	25 grams
Water .....	1,000 grams

Dissolve the carbonate in a little water, add the alizarin paste, and, lastly, the logwood, dissolved in the remainder of the water, and filter. Transfer the liquor to a rather large bottle, drop in a few nails or iron filings, and expose the whole to the sunlight for about a week, with occasional shaking. Decant and add 4 or 5 grams of carbolic acid to insure keeping.

**School Ink.**

Japanese nutgalls.....	15 pounds
Water .....	80 quarts
Dextrin .....	6 pounds
Ferrous sulphate.....	5 pounds
Wood vinegar.....	1 pound

Mix with logwood extract, 14 pounds; dextrin, 12; water, 100 quarts.

**Hectograph Pad.**

Cooper's gelatin.....	1 ounce
Pure glycerin .....	6 to 7 ounces

Soak the gelatin in cold water over night or until entirely swelled. Pour off the excess of water, and add the swelled gelatin to the glycerin previously heated on a salt-water bath (made by dissolving 2 ounces of common salt in 1 pint of water.) Continue heating for an hour, carefully stirring the mixture occasionally, and avoiding, as much as possible, the formation of bubbles or froth. Finally, add 20 drops of oil of cloves to prevent decomposition, and pour it into a suitable form, wherein it is allowed to solidify.

To prepare the pad for use, it is necessary to press a wet sponge lightly over the face of the gelatin, and allow it to nearly dry before taking the first copy. If this precaution is neglected, the face of the pad will be ruined by the first transfer. The writing to be copied must be made with hectograph ink, using a new steel pen. After the writing is dry, it is placed face downward on the pad and rubbed gently on the back to ensure the perfect contact of every part. After remaining on the pad for about

a minute, remove the original, and proceed to take copies. Always begin removing the copy by taking hold of a corner. After taking the desired number of copies, or when the impression is exhausted, lightly wash the pad with a sponge wet with cold water. The pad is then allowed to dry before being used again. Washing is not necessary, however, when the pad is left unused for 2 or 3 days, as the ink will be absorbed and will not interfere with making a new transfer. The pad unavoidably wastes away in use. If its surface should become uneven, or should it be injured in any way, it can be restored by reheating it over a salt-water bath and allowing it to cool in a place free from dust, where it should remain for five to six hours.

**Hectograph Mass.**

Glycerin .....	11 parts
Cox's gelatin.....	2 parts
Barium sulphate.....	4 parts

Soak the gelatin over night in enough water to dissolve it; then heat on the water bath, add the glycerin while hot, and the barium sulphate, previously triturated in a mortar with a part of the mixture, and pour the whole into a suitable pan.

**Hectograph Mass.**

For a dish 7 x 11 inches, the following suffices:

Glue .....	3 ounces
Glycerin .....	15 fl. ounces
Kaolin (fine powder).....	6 drams
Water .....	11¼ fl. ounces

Prepare as above.

**Hectograph Mass.**

Gelatin .....	1 ounce
Water .....	4 ounces
Glycerin .....	12 ounces
Barium sulphate.....	6 drams

Dissolve the gelatin in the water on a water bath, add the glycerin and the barium sulphate, previously rubbed up with a little of the glycerin.

**Hectograph Mass.**

Glycerin .....	12 parts
Gelatin .....	2 parts
Water .....	7½ parts
Sugar .....	2 parts

Prepare as directed in the preceding.

**Hectograph Mass.**

Water .....	10 parts
Dextrin .....	1½ parts
Sugar .....	2 parts
Gelatin .....	15 parts
Glycerin .....	15 parts
Zinc oxide.....	1½ parts

Twenty-four and a half ounces of this mass will produce an 8x12-inch surface.

Prepare as directed in the preceding.

**Hectograph Mass.**

Gelatin .....	10 parts
Glycerin .....	15 parts
Powdered talc.....	2 parts

Prepare as directed in the preceding.

**Hectograph Mass.**

Gelatin .....	2 ounces
Water .....	7½ ounces
Glycerin .....	7½ ounces
Kaolin .....	1 ounce

Prepare as directed in the preceding.

**Green Hectograph Ink.**

Aniline blue, soluble in water, by weight.....	10 parts
Picric acid.....	10 parts
Alcohol (90 per cent).....	30 parts
Glycerin .....	10 parts
Water .....	30 parts

Mix. By decreasing or increasing the quantity of picric acid, various shades of yellow are obtained.

**Willson's Hectograph Ink.**

Rhodamin .....	3 parts
Alcohol .....	4 parts
Water .....	20 parts
Glycerin .....	1 part

Mix.

**Hectograph Ink.**

Paris violet.....	1 part
Water .....	3 parts

Mix and dissolve.

**Villon's Hectograph Ink.**

Bordeaux red.....	3 parts
Alcohol .....	2 parts
Water .....	20 parts
Glycerin .....	1 part

Mix and dissolve.

**Hectograph Ink.**

Rosaniline acetate.....	2 parts
Alcohol .....	1 part
Water .....	10 parts

Mix and dissolve.

**Red Hectograph Ink.**

Diamond fuchsine, by weight .....	1 ounce
Alcohol .....	1 ounce
Glycerin .....	1 ounce
Water .....	5 ounces

Mix and dissolve.

**Red Hectograph Ink.**

Diamond fuchsine, by weight .....	1 ounce
Alcohol .....	1 ounce
Acetic acid.....	2 drams
Gum arabic.....	1 ounce
Water .....	7 ounces

Mix and dissolve.

**Fireproof Ink.**

Graphite, finely powdered.	1 ounce
Gum copal.....	1 3/4 ounces
Iron sulphate.....	1 dram
Tincture of galls.....	1 dram
Indigo sulphate.....	2 1/2 drams
Water .....	8 ounces

Mix and boil. Let stand until cool, then decant and bottle.

**Fireproof Ink.**

Powdered graphite.....	1 pound
Copal varnish.....	2 drams
Copperas .....	2 ounces
Tincture of nutgalls.....	6 ounces
Indigo carmine.....	2 drams
Water .....	16 ounces

Mix and boil.

**Mimeograph Ink.**

Shellac .....	2 ounces
Borax .....	2 ounces
Water .....	25 ounces
Gum arabic.....	2 ounces

Boil till dissolved, then withdraw from the fire. When cold, add water to make 25

ounces. Now add the desired coloring matter, using one of the following pigments:

Venetian red, for red;	-
Lampblack, for black;	-
Prussian blue, for blue; and ochre, for yellow.	-

**Mimeograph Ink.**

Boiled linseed oil.....	1 pound
Indigo .....	1 1/2 ounces
Berlin blue.....	1 1/2 ounces
Lampblack .....	1 1/2 ounces

Mix intimately and thin with oil of turpentine, if desired.

**Mimeograph Ink.**

Copaiba .....	9 ounces
Lampblack .....	3 ounces
Indigo .....	5 drams
Prussian blue.....	5 drams
Indian red.....	6 drams
Yellow soap (dried and powdered).....	2 or 3 ounces

Mix and triturate very thoroughly.

**Neostyle Ink (Cyclostyle Ink).**

Grind aniline color with glycerin and thin with alcohol. A few drops of oil of cloves (or any other aromatic oil) may be added.

**Ink Extract.**

Extract of logwood.....	5 parts
Yellow potassium chromate .....	1 part

Mix. Half an ounce of this extract when diluted with water is sufficient to make a quart of ink.

**Ink Extract.**

	Plain.	Copying.
Tannin .....	1 oz.	9 drams
Dried iron sulphate .....	3 1/2 drs.	4 drams
Gum arabic.....	75 grs.	2 drams
Sugar .....	40 grs.	75 grains
Aniline water-blue I. B.....	40 grs.	75 grains

Mix. A teaspoonful to be mixed with a quart of water.

**Ink Extract.**

Extract of logwood.....	5 ounces
Sodium carbonate, dried..	1/2 ounce
Potassium chromate.....	1/2 ounce

Mix. One-half ounce of this will make 1 quart of ink with water.

**Frick's Ink Powder.**

Pulverized nutgalls.....	42 parts
Ferrous sulphate.....	30 parts
Gum arabic.....	15 parts
Alum .....	6 parts

The nutgalls and alum are finely powdered and mixed with the other ingredients, previously thoroughly dried and pulverized. The powder is then packed in boxes.

A small quantity of this powder thrown into water yields, in a short time, a fairly good ink, which, however, forms a thick sediment from which it must be poured off. An ink powder completely soluble may be readily prepared by extracting the nutgalls by themselves with water, evaporating the extract to dryness, and mixing the residue with the other ingredients.

**Ink Powder.**

Tannic acid.....	2 ounces
Exsiccated ferrous sulphate .....	2 ounces
Exsiccated zinc sulphate..	1 ounce
Gum acacia.....	1 ounce

Mix. One ounce of this added to half a



pint of water and allowed to stand gives a good ink.

#### Copying Ink Powder.

Extract of logwood.....	6 ounces
Ammonium oxalate.....	2½ ounces
Aluminum sulphate.....	5 ounces
Oxalic acid.....	1½ drams
Salicylic acid.....	1 dram
Potassium chromate yellow .....	1 dram

Reduce each to a coarse powder and mix them. The above is sufficient to make 1 gallon of copying or 2 gallons of writing ink by the addition of warm water.

#### Writing Fluid Powder.

Nutgalls, ground.....	6 ounces
Ferrous sulphate.....	1½ ounces
Sodium chloride.....	1½ ounces
Sugar .....	1½ ounces
Potassium bisulphate.....	3 drams
Benzoic acid.....	1 dram
Indigo carmine.....	1 dram

Reduce each to a coarse powder and mix them. The quantity is sufficient to make, when added to sufficient water, 4 pints of ink.

#### Ink Tablets.

Nutgalls .....	2 ounces
Iron sulphate.....	5 drams
Copper sulphate.....	15 grains
Alum .....	1 dram
Sugar candy.....	90 grains
Gum arabic.....	2½ drams
Cream of tartar.....	15 grains

Mix and make into a stiff paste with water. Mold and dry.

#### Ink Eraser.

Immerse blotting paper or any similar material in a hot concentrated solution of citric acid, roll it into a pencil, and coat the larger portion of it with paper or lacquer. Moisten the eraser with water, and rub over the ink to be removed. Let fall on the ink spot a drop of water containing chlorinated lime. The ink immediately disappears.

#### Ink Erasive.

In 2 quarts of water dissolve 4 ounces of citric acid, and then add from 6 to 8 ounces of a concentrated solution of borax. This is Solution No. 1. To prepare Solution No. 2, add 2 quarts of water to ¼ pound of chlorinated lime, shake well and set aside for about a week; decant, and add from 6 to 8 ounces of concentrated solution of borax. This composition is used by saturating the ink spot with Solution No. 1, removing excess of liquid with a blotter, and then applying Solution No. 2. When the stain has disappeared, apply the blotter, and wash the spot by the alternate use of clear water and blotting paper.

#### Ink Eraser.

Mix equal parts of oxalic acid and tartaric acid in powder. When to be used, dissolve a little in water. It is poisonous.

#### Ink Eraser.

Dissolve equal parts of cream of tartar and citric acid in water. Dissolve a little in warm water and apply a drop to the ink. Wash with water and blotting paper. Repeat until the ink disappears.

#### Ink Eraser.

Cold aqueous acetic acid or solution of calcium hypochlorite, bleaching powder, eau de Javelle. Apply first in weak dilution, using stronger dilutions, if necessary.

#### Ink Eraser.

Alum .....	1 part
Amber .....	1 part
Sulphur .....	1 part
Saltpetre .....	1 part

Reduce each first to a fine powder, then mix. This forms an excellent mixture for the removal of ink spots and writing on paper.

#### To Restore Faded Writing.

A moderately concentrated aqueous solution of gallotannic acid restores faded manuscripts without the inconvenience of employing ammonium hydrosulphate. The acid is applied with a pencil, the excess washed off with water, and the manuscript dried in a current of air at about 55° to 60° C. The writing comes out clear and black.

#### To Remove Marking Ink and Indelible Ink.

Apply a solution of potassium cyanide, followed by ammonia water, and washing with clean water. The potassium cyanide is exceedingly poisonous.

#### Carbon Paper.

Soft paper is covered with a combination of grease and plumbago or lampblack. The mixture is allowed to remain for 12 hours, and is then wiped smooth.

#### Carbon Paper.

Melt 10 parts of lard and 1 part of wax and mix with a sufficient quantity of lampblack. Saturate unglazed paper with this mixture, remove excess and press.

#### Copying Paper, Black.

Melt equal parts of castor oil and lard and make a paste with lampblack. Rub well into soft unglazed paper, leaving a layer of the paste on the paper, set aside for a day and rub off the superfluous paste.

#### Copying Paper, Blue.

Use ultramarine blue instead of lampblack, as directed in the preceding formula. Other pigments may be used for various colors.

#### Drawing Crayons.

Pale shellac, 5 parts; wood naphtha, 12 parts; dissolve, and with this fluid mix up the coloring powder, previously stirred up with an equal weight of fine pale blue clay; dry by a stove heat.

#### Drawing Crayons.

Shellac, 3 parts; alcohol, 4 parts; oil of turpentine, 2 parts; dissolve and add pure clay, 6 parts; coloring matter, a sufficiency; form the mass into crayons, and dry them by a stove heat.

#### Drawing Crayons.

White curd or castile soap, cut into thin shavings, 1 ounce; boiling water, 1 pint; dissolve, and when cold add gradually as much alcohol as will render the liquid barely transparent. With this fluid make equal parts of the finest elutriated clay and chalk into a stiff paste, adding sufficient coloring matter as before. For common kinds of crayons, the alcohol may be omitted, but the mass will then dry more slowly.

#### Drawing Crayons.

Curd soap, 1½ ounces; gum arabic, ½ ounce; boiling water, 1¼ pints; dissolve, and use as directed in the preceding formula.

**Drawing Crayons.**

Spermaceti, 3 ounces; boiling water, 1 pint; agitate together till a homogeneous mixture or emulsion is formed; add bone ash, 1 pound (or more, previously reduced to an impalpable powder), and sufficient coloring matter to give the proper tint; reduce the whole to a perfectly homogeneous paste, and form it into crayons.

**Drawing Crayons.**

Pipeclay and the finest prepared chalk, equal parts, or, pipeclay alone, q. s.; coloring, a sufficient quantity; make them into a paste with pale, mild ale.

**Embroidery Marking.**

The drawing crayons, made with white curd or castile soap, and very soft, according to the formula given above, are good marking pencils for embroidery. The crayons made with spermaceti may also be used, but the writing is not so easily removed as that produced with the soap crayons.

**Lithographic Crayons.**

Tallow soap, 7 parts; white wax, 6 parts; melt by a gentle heat, and add lampblack, 1 part; keep the mixture melted, with constant stirring, for 20 or 30 minutes, then let cool a little, and cast it into molds.

**Lithographic Crayons.**

White wax, 4 parts; shellac and hard tallow soap, of each 2 parts; lampblack, 1 part. Prepare as directed in the preceding formula.

**Lithographic Crayons.**

Spermaceti, white wax and hard tallow soap, of each equal parts; lampblack, a sufficient quantity, to color. Prepare as in the preceding.

**Pencils for Writing on Glass.**

Spermaceti ..... 4 parts  
Tallow ..... 3 parts  
Wax ..... 2 parts

Melt in a saucer and add to the mixture, with constant stirring:

Red lead..... 6 parts  
Potash ..... 1 part

Continue to heat the mass for half an hour and while still hot pour into small glass tubes, the size of a lead pencil.

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## HORTICULTURAL PREPARATIONS.

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**Weed-Killer.**

Arsenous acid..... 3 pounds  
Hydrochloric acid..... 1 gallon  
Water ..... 1 gallon

Boil in an earthen pan or an enameled dish and make up to 4 gallons with water. Color with aniline blue.

**Weed-Killer.**

Arsenous acid..... 4 pounds  
Caustic soda..... 3 pounds  
Water ..... 4 gallons

Boil till dissolved and color with copper sulphate.

**Weed-Killer, Powder.**

White arsenic..... 1 pound  
Caustic soda, powdered... ½ pound  
Dried sodium carbonate... ½ pound  
Prussian blue..... 1 dram

Mix.

**Fertilizing Mixture for Lawns.**

Sodium nitrate..... 1 pound  
Calcium superphosphate... ¼ pounds  
Guano ..... 2 pounds  
Gypsum ..... 1½ pounds

Mix and sprinkle on lawns once a month.

**Fertilizer, to Make Roses Bloom.**

Scrape from the chimney or stovepipe where wood is used for fuel, a quantity of soot. Put into a vessel and pour boiling water over it. Let it stand for a few days, and then use the liquid to water the earth around the plants. The application should be made every two or three days.

**Fertilizer.**

Ammonium sulphate..... 1 ounce  
Potassium nitrate..... ½ ounce  
Sugar ..... ¼ ounce

Mix. Use a teaspoonful to a gallon of water; to be applied to the plants once or twice a week.

**Fertilizer.**

Sodium chloride..... 2 pounds  
Potassium nitrate..... 1 pound  
Magnesium sulphate..... 1 pound  
Sodium phosphate..... 4 pounds

Mix. One teaspoonful to be dissolved in a quart of water, and the plants sprinkled daily with the solution.

**Fertilizer.**

Ammonium nitrate..... 4 pounds  
Ammonium phosphate..... 5 pounds  
Potassium nitrate..... 9 pounds

Mix. Use as directed in the preceding formula.

**Fertilizer.**

Potassium chlorate..... 1 pound  
Calcium nitrate..... 4½ pounds  
Magnesium sulphate..... 12½ ounces  
Potassium phosphate..... 14 ounces  
Ferrous phosphate..... 5 ounces

Mix. One teaspoonful to be dissolved in a quart of water, and the plants sprinkled daily with the solution.

**Fertilizer (for Tomatoes and Other Vegetables).**

Ammonium sulphate..... 9 pounds  
Ferrous sulphate..... 1 pound

Mix. Use as directed in the preceding.

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## HORTICULTURAL SPRAYS AND WASHES.

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**Horticultural Sprays and Washes.**

Sprays and washes are liquid preparations, sometimes holding solids in suspension, applied to plants for the destruction of insects and fungi. A spray in a fine state of division is applied by means of a machine. A wash is applied in a coarser manner, in some cases the plant being immersed bodily in it. The object of the application is accomplished either by the corroding or destruction of the body of the insect by the application itself or by poisoning the food of the insect. Water, particularly hot water, is one of the best of the former class of insecticides; when heated to 115° F. it kills outright aphides of all kinds. Some insects, however, are protected against this by woolly coverings or webs, and in such cases, unless

applied under pressure, water alone is not of much use. The latter class of insecticides includes not only virulent poisons, such as nicotine and arsenical preparations, but such substances as pyrethrum, quassia and white hellebore. The precise nature of the action of fungicides can not at present be indicated. Generally speaking, the insects in the imago, or perfect condition, may be destroyed by contact, while poisonous substances are necessary for the destruction of larvæ. The eggs and pupæ are not so easily destroyed.

#### Infusions Used as Sprays.

Infusion of tobacco is prepared by infusing tobacco (1 part) in water (40 parts) for several hours, and straining.

Infusion of pyrethrum.—The whole flowers may be used, or they may first be ground into a very fine powder, free from grit. If made from the latter, the infusion is well stirred before use, and is not strained. The strength generally used is 2½ per cent.

Infusion of white hellebore is a powerful insecticide. The infusion need not be strained. The strength should be 2 per cent, and the infusion should be freshly made.

Infusion of quassia is one of the most potent remedies known for green fly. It can often be applied where other insecticides can not be used. For this reason it is largely used both for indoor and outdoor plants. It is rendered more adhesive by the addition of a little soft soap.

#### Sprays for Trees.

Iron sulphate..... 1 pound  
Soft water..... 1 gallon  
Mix and dissolve.

#### Sprays for Trees to Destroy Insects.

Mercuric chloride..... 1 ounce  
Water ..... 10 gallons  
Mix and dissolve.

#### Oil Spray for Trees.

Paraffin ..... 20 ounces  
Soft soap..... 2 pounds  
Water ..... 1 gallon

Boil together and mix well.

#### Spray for Trees.

Menhaden oil..... 8 gallons  
Carbolic acid..... 6 gallons  
Caustic potash..... 15 pounds

Mix and boil together with 20 gallons of water.

#### Caterpillars, to Destroy.

Make a decoction of tobacco and rue, and add 5 per cent of carbolic acid. Use as a spray or wash.

#### Worms in Flower Pots.

A weak solution of corrosive sublimate (1:500) will destroy the earth worms without injuring the plants.

#### Fungus Diseases of Trees.

Copper carbonate..... 1 ounce  
Ammonia water, enough to dissolve.  
Water ..... 9 gallons

Mix. Apply to the trees before the buds break.

#### Insects on Roses and Other Flowers.

Dust with powdered hellebore once a week.

#### Insects on Roses, etc.

Snuff ..... 1 pound  
White hellebore..... 1 pound  
Cayenne pepper..... ½ pound  
Mix and use as a dusting powder.

#### Insects on Roses.

Use the powder, prepared according to the preceding formula, and make a strong decoction. Use as a spray or wash.

#### Insects on Roses, etc.

Mix the powder of snuff, white hellebore and cayenne pepper, directed in the preceding formula, with 1 pound well dried saltpetre and burn under the plants.

#### To Protect Trees From Climbing Insects.

Pitch ..... 6 pounds  
Rosin ..... 5 pounds  
Rosin oil ..... 1 pound

Melt together and apply the mixture around the stem of the tree in the form of a band or belt.

#### To Protect Trees From Climbing Insects.

Tar ..... 10 pounds  
Rosin ..... 5 pounds  
Palm oil..... 8 pounds

Melt together and use as directed in the preceding.

#### Paris Green Wash.

Paris green..... 10 ounces  
Lime ..... 20 ounces  
Water ..... 125 gallons

Mix and use as a wash or spray. Keep well stirred while using.

#### Fungicide for Turnips, Beets, etc.

Iron sulphate..... 2 pounds  
Sand ..... 1 pound

Mix and spread on the soil, in which the vegetables are grown.

#### Insecticide for Fruit Trees.

Formalin ..... 1 pound  
Glycerin ..... 2 pounds  
Water ..... 2 gallons

Mix. Use as spray or wash.

#### Ammonio-Copper Carbonate Fungicide.

Copper carbonate..... 0.065  
Ammonium carbonate..... 0.4  
Water, enough to make..... 100.00

Mix the two carbonates and treat with a little warm water. When dissolved, add the rest of the water.

#### Formaldehyde Fungicide.

Solution of formaldehyde. 10.00  
Soft soap..... 16.00  
Water ..... 80.00

Dissolve the soft soap in the water, add the solution of formaldehyde and shake together.

#### Bordeaux Mixture.

Copper sulphate..... 1.6  
Lime ..... 0.50  
Water, enough to make..... 100.00

The copper sulphate is dissolved in about three-fourths of the water. The lime, carefully slaked, is made into a thin cream with the rest of the water. This is added gradually to the copper solution, mixed well and allowed to settle until a little of the supernatant liquid yields no precipitate with a solution of potassium ferrocyanide.

An improved method for the manufacture of Bordeaux Mixture is to substitute lime water for the milk of lime. The amount of lime added can thus be more accurately measured, the same fungicidal strength can be obtained with very much less copper sulphate, and the resulting mixture is smoother and finer, therefore less liable to damage the spraying nozzles.



**Improved Bordeaux Mixture.**

Copper sulphate.....	0.625
Lime water.....	85.00
Water, enough to make...	100.00

Dissolve the copper sulphate in about five parts of the water, add the lime water, mix well, allow to settle, and test the supernatant liquid for copper with potassium ferrocyanide. If any be present, add more lime water until completely free from soluble copper, and make up to bulk with water. These solutions are known as "normal" mixtures, and if well made should not seriously injure the foliage.

**Caustic Alkali Winter Wash.**

(No. 1.)

Caustic soda (98 per cent)	20.00
Water, enough to make...	100.00

**Caustic Alkali Winter Wash.**

(No. 2.)

Caustic soda (98 per cent)	10.00
Potassium carbonate.....	10.00
Water, enough to make...	100.00

Either of these must be diluted one in ten with water before use.

**Quassia Spray or Wash.**

Quassia chips.....	1.00
Soft soap.....	1.00
Water, enough to make...	100.00

Infuse the quassia in half the water for twelve hours, strain. Dissolve the soap in the other half of the water. Mix the solutions. This forms the basis of most of the "non-poisonous" insecticides, and is more convenient when put up in a concentrated form.

**Concentrated Quassia or Wash.**

Extract of quassia.....	3.00
Oil of camphor.....	2.00
Soft soap.....	10.00
Methylated spirit.....	5.00
Water, enough to make...	100.00

Dissolve the soap in 40 of the water. Mix the spirit and oil, and add this to the soap solution. Mix these thoroughly by means of a syringe. Dissolve the extract in the remaining water and finally mix the liquids. One volume of this is diluted by the addition of forty-nine volumes of water before use.

**Concentrated Nicotine Insecticide.**

Nicotine .....	2.00
Methylated spirit.....	5.00
Soft soap.....	8.00
Infusion of quassia, enough to make.....	100.00

Such a wash, prepared according to art, is miscible with water, and before use it should be diluted by the addition of forty times its own volume of water, for aphides; while for red spider, thrip and mealy bug, it should be used double, or even quadruple, this strength.

**Kerosene (Paraffin) Emulsion.**

Kerosene .....	100
Water .....	50
Soft soap.....	2.5

Boil the soap in the water, and while still hot pour in the kerosene and churn the mixture with a syringe until completely emulsified. This preparation contains about 65 per cent of kerosene and should not separate even on dilution. It should be kept free from frost. Before being used for greenhouse plants it should be diluted with twenty times its bulk of warm water and thoroughly mixed. For outside use it is made much stronger than this. Kerosene is also emulsified with

soap and a very little water, when a jelly is obtained on cooling. This is known as soluble kerosene or paraffin jelly.

**Kerosene Jelly.**

Kerosene .....	100
Soft soap.....	16
Water .....	2.5

Add the water to the soap and heat until liquid. Remove from the fire and incorporate with the kerosene.

**Kerosene-Naphthalene Jelly.**

Paraffin .....	26.00
Naphthalene .....	8.00
Water .....	30.00
Soft soap.....	80.00

Mix as for kerosene jelly, adding the naphthalene in powder before the kerosene.

**Woburn Winter Wash (Iron or Copper).**

Copper sulphate.....	3.00
Or	
Iron sulphate.....	1.00
Lime, from.....	0.5 to 1
Kerosene .....	20.00
Water .....	190.00
Caustic soda.....	4.00

Dissolve the sulphate used in most of the water. Carefully slake the lime and make it into a cream, add this to the sulphate solution. The kerosene is added and emulsified with a syringe, the caustic alkali being added last.

**Copper Sulphate.**

This salt is frequently used as a fungicide. It is applied as a paint or sprayed on to dormant wood, walls, or any place where spores of fungi might be resting. For this purpose an aqueous solution containing from one-half to one per cent is used.

**Paris Green.**

Chemically known as copper aceto-arsenite, paris green is used extensively as an insecticide in Spring and Summer. It is applied in the form of a spray in which from 0.05 to 0.5 part is incorporated with one hundred parts of water, with or without the addition of an equal quantity of lime. The lime, neutralizing a little free acid which the salt contains, diminishes the tendency which this substance has to scorch the foliage.

**London Purple.**

Arsenous oxide.....	1.25
Lime .....	2.5
Water, enough to make...	100.00

Boil the arsenous oxide and the lime—previously slaked—in a little of the water. When it has boiled for an hour, add the rest of the water. Before use this should be diluted with from twenty to forty times its bulk of water.

**Lead Arsenate.**

This compound is the most valuable of all the toxic substances used for the protection of fruit trees and bushes. It may be prepared as follows:

Sodium arsenate dry)....	0.06
Lead acetate.....	0.2
Water, enough to make...	100.00

Dissolve the arsenate and acetate separately, mix the liquids and add one part of treacle. This renders the wash more adhesive. This preparation may be made in the form of a paste, containing half its weight of anhydrous arsenate. This is sold as Swift's paste. It is essential in the use of this substance, as in the case of the use of all arsenical insecticides, that no soluble

arsenical compound be present. If this is ignored, serious scorching will occur.

#### Calcium Arsenate Wash.

Arsenate of sodium (dry)	0.115
Lime .....	0.2000
Water, enough to make	100.00

Slake the lime, rub into a cream, and add to the arsenate, previously dissolved in the water. Calcium arsenate has been used instead of lead arsenate. It is cheaper, but it is reported to be less effective.

#### Grafting Wax.

One of the best grafting waxes is made by melting four parts by weight of rosin, one part beeswax and one part tallow. When thoroughly melted, pour into cold water; when cool enough, take out and work by molding and pulling until it becomes quite stiff. It is necessary to have the hands well greased with tallow while handling this wax.

#### Grafting Clay.

One-third fresh cow-dung, two-thirds clay, with a little plaster hair. Thoroughly mix and allow to dry until about the consistency of fresh putty. This paste has been recommended by the U. S. Department of Agriculture as an application for surface wounds in the trunk or large limbs of trees. The paste when applied keeps the surface of the wound from drying out.

#### Dressing for Wounds made in Pruning.

Coal tar and pitch mixture may also be applied to wounds after they have been cleaned, pared, and allowed to dry enough so that the material will stick. Thick tar is said to be one of the most easily applied and best dressings there is. The coal tar may be thickened by burning it in an iron kettle until it reaches the desired consistency, when it is painted on the wounds while still slightly warm. Thus prepared it dries quickly, forming a hard, glazed surface, which does not crack or peel off, as is the case with pitch, shellac varnish, paint, etc. Shellac varnish is said to be a very good dressing for wounds made in pruning, but, as noted above, it is more liable to crack and scale off than coal tar, and it is more expensive.

## ALLOYS, COMPOUNDS, ETC.

#### Compounding Alloys.

Considerable experience is necessary to insure success in compounding alloys, especially when the metals employed vary greatly in fusibility and volatility. The general order of procedure is outlined in the following rules:

1. Melt the least fusible, oxidizable and volatile first, and then add the others heated to their point of fusion or near it. Thus, if it is desired to make an alloy of exactly one part copper and three of zinc, it will be impossible to do so by putting proportions of the metals in a crucible and exposing the whole to heat. Much of the zinc would fly off in vapor before the copper was melted. First melt the copper and add the zinc, which has been melted in another crucible. The zinc should be in excess, as some of it will be lost anyway.
2. Some alloys, as copper and zinc, copper and arsenic, may be formed by exposing heated plates of the least fusible metal to the vapor of the other. In making brass in the large way, thin plates of copper are dissolved, as it were, in melted zinc until the proper proportions have been obtained.
3. The surface of all oxidizable

metals should be covered with some protecting agent, as tallow for very fusible ones, resin for lead and tin, charcoal for zinc, copper, etc. 4. Stir the metal before casting and, if possible, when casting, with a whitewood stick; this is much better for the purpose than an iron rod. 5. If possible, add a small portion of old alloy to the new. If the alloy is required to make sharp castings and strength is not a very great object, the proportion of old alloy to the new should be increased. In all cases a new or thoroughly well cleansed crucible should be used.

#### Babbit Metal (Anti-Friction Alloy).

Zinc .....	17 parts
Copper .....	1 part
Antimony .....	1½ parts
Melt together.	

#### Babbit Metal.

Copper .....	6 pounds
Tin .....	12 pounds
Lead .....	150 pounds
Antimony .....	30 pounds
Wrought iron.....	1 pound
Cast iron.....	1 pound
Melt together.	

#### Babbit Metal.

Tin .....	20 parts
Antimony .....	2 parts
Lead .....	1 part
Copper .....	80 parts
Fuse together.	

#### Babbit Metal.

Zinc .....	6 parts
Tin .....	1 part
Copper .....	20 parts
Melt together.	

#### Bell Metal.

Copper .....	77 parts
Tin .....	21 parts
Antimony .....	2 parts
Melt together.	

#### Bell Metal.

Copper .....	78 parts
Tin .....	22 parts
Melt together.	

#### Brass.

Copper .....	66 parts
Zinc .....	34 parts
Lead .....	1 part
Melt together.	

#### Britannia Metal.

Tin .....	90 parts
Antimony .....	6 parts
Copper .....	3 parts
Zinc .....	1 part
Melt together.	

#### Pewter.

Tin .....	81 parts
Antimony .....	6 parts
Copper .....	1½ parts
Lead .....	11½ parts
Melt together.	

#### Bronze.

Copper .....	90 parts
Zinc .....	6 parts
Tin .....	2 parts
Lead .....	2 parts
Melt together.	

#### Gold Alloys, Pale Gold.

Gold .....	464 parts
Copper .....	16 parts
Melt together.	

#### Pale Yellow Gold.

Gold .....	384 parts
Silver .....	96 parts
Melt together.	

**Red Gold.**

Gold .....	460 parts
Copper .....	20 parts
Melt together.	

**German Silver (Argentan).**

Copper .....	60 parts
Zinc .....	25 parts
Nickel .....	15 parts
Melt together.	

**White Metal.**

Copper .....	65 parts
Arsenic .....	55 parts
Melt together.	

**White Metal.**

Nickel .....	60 parts
Copper .....	30 parts
Zinc .....	30 parts
Melt together.	

**Artificial Building Stone.**

Waste building material, as quartz sand, granite, fluorspar, broken clay bricks, etc., are mixed with alkaline silicates, or soluble glass, forming insoluble silicates of great hardness. The mass may be colored black by adding 2 to 10 per cent of graphite, charcoal or manganese dioxide; red by 6 per cent of colcothar; brick red by 4 to 7 per cent of cinnabar; orange by 7 per cent of red lead; yellow by 6 per cent of yellow ochre, or 5 per cent of chrome yellow; green by 8 per cent of chrome green; blue by 6 to 10 per cent of Bremen blue or Napoleon blue; and white by 10 to 20 per cent of zinc white.

**Artificial Building Stone.**

By skilful mixing the various colors and kinds of artificial building stone as described in the preceding formula, any building stone or marble can be imitated.

**Stucco.**

Stucco is plaster or cement of various degrees of fineness, used chiefly in an ornamental way to coat and decorate walls. It consists of fine slaked lime, chalk and pulverized white marble, or of calcined gypsum mixed with water-glue or gelatin. The proportions vary greatly, each artist having his own combination, that he declares to be the best and the formula of which he keeps secret. Sometimes small particles of hair are added.

**Boiler Incrustations.**

Catechu .....	100 parts
Potash .....	50 parts
Soda .....	50 parts
Common rosin .....	10 parts
Lime .....	20 parts
Water .....	200 parts

The lime, rosin, soda and water are boiled for 30 minutes and then allowed to settle. A decoction of catechu in 100 parts of water is prepared in another boiler, strained and mixed with the other solution. The fluid is then stored for future use. Every six weeks one pint of the solution for each horse power is introduced into the boiler by means of a feed-pump.

**Boiler Compound.**

For boilers of 30-horse power, fed with river water, the following mixture is used, which should be renewed every time the boiler is emptied.

Crystallized soda .....	6 pounds
Dextrin .....	6 pounds
Alum .....	2 pounds
Sugar .....	2 pounds
Potash .....	1 pound

Mix.

**Boiler Compound (Anti-Scale Compound).**

Salt .....	12 pounds
Caustic soda .....	2½ pounds
Extract of oak bark .....	¼ pound
Potash .....	½ pound

Mix.

**Boiler Compound.**

(For a 5-h.p. boiler, fed with water containing lime.)

Catechu .....	2 pounds
Dextrin .....	1 pound
Cane sugar .....	½ pound
Alum .....	½ pound
Gum arabic .....	½ pound

Mix.

**Boiler Compound.**

Turmeric .....	2 pounds
Dextrin .....	1 pound
Sodium bicarbonate .....	2 pounds
Potash .....	½ pound
Molasses .....	½ pound
Alum .....	½ pound

Mix.

**Freezing Mixtures.**

(a)

Sodium sulphate .....	4 pounds
Ammonium chloride .....	2½ pounds

(b)

Potassium nitrate .....	2½ pounds
Mix them and when desired for use add 9 pounds of water.	

(c)

Potassium nitrate .....	2 pounds
Ammonium chloride .....	2 pounds
Water .....	5 pounds

(d)

Ammonium nitrate .....	4 pounds
Water .....	4 pounds

(e)

Sodium sulphate .....	5 pounds
Diluted sulphuric acid .....	4 pounds

(f)

Sodium phosphate .....	9 pounds
Dilute nitric acid .....	4 pounds

Select the particular formula desired and mix when wanted for use.

**Freezing Mixture.**

Snow or ice .....	2 pounds
Salt .....	1 pound

Mix.

**Freezing Mixture.**

Snow or ice .....	8 parts
Diluted sulphuric acid .....	10 parts

Mix.

**Freezing Mixture.**

Ammonium chloride .....	5 pounds
Potassium nitrate .....	5 pounds
Sodium sulphate .....	8 pounds
Water .....	16 pounds

Mix.

**Tempering Liquid.**

Water .....	2 gallons
Saltpetre .....	½ ounce
Borax, powdered .....	½ ounce
Ammonium chloride .....	½ ounce
Zinc sulphate .....	1 ounce
Salt .....	1½ pints

Mix.

**Tempering Liquid.**

Water .....	2 gallons
Saltpetre .....	2 ounces
Alum .....	2 ounces
Ammonium chloride .....	1 ounce
Salt .....	1½ pounds

Mix.



## ELECTROPLATING.

The first and most important operation preliminary to the deposition of one metal upon another is to see that the surface of the metal to be "plated" is thoroughly and chemically clean, else the deposited metal will not adhere. Different metals require different methods of treatment, usually dipping them in dilute acid or mixture of acids for such metals as copper, iron, zinc and silver, while lead and tin, and such compounds as pewter are cleaned by the aid of caustic soda. When the articles are thus cleaned they are dipped in clean water before being transferred to the depositing cell. Under no circumstances should the articles be handled with the fingers after cleaning, this part of the operation being performed by means of copper or glass tongs.

### Gold Plating Solution.

In the process of electro-plating with gold the bath is usually heated, as the deposits obtained in such a bath are more homogeneous, tenacious and durable, and of a better color, besides which recommendation a greater quantity of the metal may be deposited satisfactorily from it in a given time than from a cold bath. The same bath does not answer very well for all metals; either the bath must be modified to suit the metal, or the latter must be previously coated with another metal to suit the conditions. Gold deposits are obtained with the greatest facility upon silver or copper, their rich alloys, or other metals coated with them. With these a hot bath (at about 170° F.) and a moderately strong current give good results.

Distilled water.....	1 gallon
Sodium phosphate, crystals .....	9/4 ounces
Sodium bisulphite.....	1 3/5 ounces
Potassium cyanide, pure.....	1/6 grain
Gold chloride.....	160 grains

Dissolve in a portion of the water, heated, the sodium phosphate. Dissolve in another portion of the water the sodium bisulphite and potassium cyanide. Dissolve the gold chloride in the remaining water, stir the solution slowly into the cold sodium phosphate solution, and finally add the solution of potassium cyanide and sodium bisulphite. The bath, now ready for use, should be colorless.

### Gold Plating Solution.

Distilled water.....	1 gallon
Potassium ferrocyanide....	5/4 ounces
Potassium carbonate, pure.....	1 1/4 ounces
Ammonium chloride.....	2/3 ounce
Gold chloride.....	2/3 ounce

Dissolve all together, except the gold chloride, in the hot water; filter, cool and gradually stir in the gold chloride dissolved in a little water. Boil for half an hour, replace the evaporated water, and the bath is ready for use.

### Gold Plating Solution.

Distilled water.....	1 gallon
Potassium cyanide.....	2 4/5 ounces
Gold chloride.....	1 ounce

Dissolve the gold chloride in the water, then add the potassium cyanide, and stir until solution is complete.

### Gold Plating Solution.

The following bath is designed to be used in the cold:

Water, distilled.....	1 gallon
Potassium cyanide, pure.....	3 1/5 ounces
Gold chloride.....	3 1/10 ounces

Dissolve the potassium cyanide in a part of the water, then gradually add the gold chloride dissolved in the remainder. Boil for half an hour before using. (Use cold.)

### Silver Plating Solution.

For silver plating the bath consists of potassium silver cyanide, prepared by precipitating solution of silver nitrate with potassium cyanide and redissolving the washed precipitate in excess of potassium cyanide solution; potassium cyanide, 12 ounces; water, 1 gallon; silver cyanide, about 1 troy ounce. Filter and use in a porcelain or glazed vessel. For the whitening bath dissolve 1 pound potassium cyanide in 1 gallon of water, add 1/4 ounce of silver cyanide and filter the solution. The baths are provided with silver feeding plates for anodes proportioned in size to the surface of the articles to be plated. These are connected with the positive pole of the battery. The cleaned articles are connected by a copper wire with the zinc pole of the battery, dipped for a moment or two in the whitening bath, and when uniformly coated with a white film of silver, transferred to the plating bath under similar conditions. Three or four Smee cells with plates 10x4 in., will generally suffice for the plating bath, and four or five similar cells for the whitening bath. Twenty to thirty minutes in the plating bath is usually sufficient to plate the work properly.

Articles of copper, brass or German silver to be plated should first be cleaned by boiling them for a few minutes in strong solution of potash to free them from traces of oil or grease, and, after rinsing, be again boiled in dilute nitric acid to remove any oxide and again thoroughly rinsed. The article to be plated must not be touched by the hand after cleaning. Just before putting the article into the bath, dip it momentarily in strong nitric acid or a mixture of equal parts of nitric and sulphuric acids and rinse quickly. After this treatment the article is sometimes dipped for a moment in dilute aqueous nitrate of mercury solution and rinsed again. This has the effect of coating the clean metal with a film of mercury, which aids in securing a perfect adhesion of the deposited silver.

### Silver Plating Solution.

For silver plating, the bath consists of potassium silver cyanide, prepared by precipitating solution of silver nitrate with potassium cyanide and dissolving the washed precipitate in excess of potassium cyanide solution, prepared as follows:

Potassium cyanide.....	12 ounces
Water .....	1 gallon

Dissolve.

### Silver Plating Without a Battery.

Silvering fluids do not give as good results as those obtained by electric deposition, but if the latter method is not available, the following liquid gives a fair deposit: Silver nitrate crystals, 2 ounces; distilled water, 4 pints; dissolve, and add 20 per cent solution of potassium iodide as long as a precipitate forms. Collect and wash free from nitrate. Dissolve the precipitate in hot strong solution of 99 per cent potassium cyanide. Do not add a drop more than is absolutely necessary. Dilute to 1 gallon. Now warm the solution to about 180° F., and immerse the grease-free articles for about two minutes. Remove, rinse with distilled water, dry, and polish.

### Silver Plating Without a Battery.

Silver nitrate, 3 parts; sodium chloride, 2 parts; cream of tartar, 210 parts. This mix-

ture is used by rubbing upon the metallic surfaces with a damp cloth.

#### Silver Plating Without a Battery.

Distilled water, 6 to 10 parts; silver chloride, 14 parts; potassium oxalate, 21 parts; sodium chloride, 30 parts; ammonium chloride,  $7\frac{1}{2}$  parts. Apply to the metallic surfaces by friction with a piece of moistened flannel.

#### Silver Plating Without a Battery.

Silver chloride, 7 parts; cream of tartar, 14 parts; sodium chloride, 21 parts; water, sufficient to form a paste. The mixture must be protected from light to prevent reduction of the silver salt. For use, spread the paste upon the surface of the metal and let dry. After a few hours rinse with acidulated water, then immerse in a solution of potassium cyanide and wash again. If a heavier plating is desired, the process may be repeated.

#### Silver Plating Aluminum.

Aluminum may be plated by simple immersion in a suitable solution of a salt of the metal that is to form the plating, when this contains organic reducing agents, such as pyrogallol, pyrocatechin, hydroquinone, gallic, tannic, tartaric or oxalic acid. For such solutions, the "Zeitschrift für Electrochemie" gives the following formulas:

Bath for silver plating in the cold.—Water, 5,400 parts; silver nitrate, 68 parts; potassium cyanide, 68 parts; ammonia water, 900 parts; hydroquinone or pyrocatechin, 8 parts.

Bath for copper plating.—Water, 18,000 parts; crystallized copper chloride, 450 parts; ammonia water, 540 parts; potassium cyanide, 495 parts; ammonium gallate or pyrogallate, 68 parts. The bath is used at  $38^{\circ}$  C.

Bath for gold plating, used hot or cold.—Water, 5,400 parts; sodium phosphate, 45 parts; sodium sulphite, 3 parts; gold chloride, 3 parts; ammonia water, 3 parts; potassium cyanide, 1.5 parts; sugar of milk, 18 parts.

#### Silvering Powder.

Silver chloride.....	3 parts
Potassium carbonate.....	6 parts
Sodium chloride.....	3 parts
Prepared chalk.....	2 parts

Powder and mix well. To use the preparation, dip a moistened rag in it and apply it to the metal to be silvered, which latter should be thoroughly freed from grease, etc., before applying the powder. Put this up in paraffin paper, as otherwise it is apt to attract moisture from the atmosphere and liquefy.

#### Restoring Tarnished Silver.

A "dipping" solution sometimes employed consists of sodium hyposulphite, 4 ounces; dissolved in water, 12 ounces. Filter. After using this liquid the silverware is rubbed dry and polished with one of the polishing powders adapted to silver. A common formula and as satisfactory as any is: Prepared chalk or whiting, 2 ounces; ammonia water, 2 fluid ounces; water, enough to make, 8 fluid ounces.

Silver which has become much tarnished may also be restored by immersion in a warm solution of 1 part of potassium cyanide to 8 parts of water. Washing well with water and drying will produce a somewhat dead-white appearance, which may be quickly changed to a brilliant lustre by polishing with a soft leather and rouge.

#### To Silver Brass.

Clean the article thoroughly with dilute nitric acid, wash with water, and then with dilute ammonia water, and dry in sawdust. Take 1 part silver chloride, 3 parts pearlsh,

1 part whiting, and  $1\frac{1}{2}$  parts common salt; or, 1 part silver chloride and 10 parts cream of tartar, and rub the brass with a moistened piece of cork dipped in the powder. Wash, dry in sawdust, and immediately lacquer to preserve the surface.

#### Silver Powder for Coating Copper.

Silver nitrate, 60 grains; common salt, 40 grains; cream of tartar, 7 drams. Ready for application when mixed and moistened with a little water.

#### To Silver Cast-Iron.

Fifteen grains silver nitrate are dissolved in 250 grains water, and 30 grains potassium cyanide added. When all dissolved, pour the solution thus prepared into 700 grains water in which 15 grains common salt have been dissolved. Clean the iron to be silvered well, dip for a few minutes in a bath of nitric acid (1.2 sp. gr.), then place in the silvering fluid.

#### To Silver Small Metal Articles.

Dip them into a solution of common salt, then rub with a mixture of 1 part precipitated silver chloride, 2 parts potash alum, 8 parts common salt and 8 parts cream of tartar. Wash and dry with a soft rag.

#### Liquid Plating Wash.

Dissolve 1 ounce silver nitrate in 12 ounces soft water, and add 2 ounces potassium cyanide. Shake together and let stand until it becomes clear. Have some  $\frac{1}{2}$ -ounce vials half full of Paris white or fine whiting, and fill them up with the liquid. This is very poisonous and should be handled with great caution.

#### Nickel Plating.

In nickel plating the double nickel and ammonium sulphate is the salt generally used. Any common form of battery may be used, but the anodes should considerably exceed in size the articles to be covered with nickel. The power of the battery must not be too strong or the deposited nickel will be black. A strong solution of nickel and ammonium sulphate is made and placed in any suitable vessel; a glazed stoneware jar answers very well, if the articles to be covered are small. Across the top of this are placed two heavy copper wires, to one of which the articles to be covered are suspended, the other to the anode. The wire leading from the zinc to the battery must then be connected with the wire from which the articles are suspended, the other battery wire being connected with the anode.

To prepare the articles for coating, they must be well cleansed by scrubbing, immersing in boiling potash to remove any grease, then dipping them for an instant in hydrochloric acid, and afterwards washing thoroughly in water, taking care that the hand does not come in contact with any part of them. This is accomplished by fastening a flexible copper wire around them and handling them by means of it. The wire serves afterwards to suspend them in the bath.

If the articles are made of iron and steel, they may first be covered with a thin coat of copper. This is best done by the cyanide bath, which is prepared by dissolving precipitated copper oxide in potassium cyanide. A copper plate is used as an anode. After they are removed from the copper bath they must be washed quickly with water and placed in the nickel bath. If allowed to become dry, or to tarnish, the nickel will not adhere. Great care must be observed during the whole process to keep all grease, dust or other dirt from the articles to be coated, or else the result will be unsatisfactory. The

whole process is one of the most difficult that is used in the arts, it being far easier to gild, plate or copper an article than to nickel it; but if due care is taken the results will amply pay for the trouble.

#### Nickel Plating Bath.

Nickel and ammonium sulphate, 725 gm.; ammonium sulphate, 225 gm.; citric acid, 50 gm., are dissolved successively in 12 liters of water, raised to a boil and filtered. The bath must have a faint acid reaction.

#### Nickel Plating Bath.

Nickel sulphate.....1,000 parts  
Ammonium tartrate, neutral ..... 750 parts  
Tannic acid..... 5 parts  
Boiling water.....3,000-4,000 parts

Dissolve the nickel sulphate in the boiling water, and add the ammonium salt and acid, filter, and add sufficient water to make 20,000 parts. This bath will deposit nickel on any metal whatsoever.

#### Nickel Plating Bath.

To a dilute solution of zinc chloride (5 to 10 p. c.) add sufficient nickel sulphate to form a deep-green solution. Heat this in a porcelain vessel to boiling, immerse the articles to be plated, after thoroughly cleaning, and boil 30 to 60 minutes, replacing the water as it is vaporized. Then place the objects in water containing a little fine chalk. According to another method, the zinc chloride solution is heated in a copper kettle, acidulated with hydrochloric acid, powdered metallic zinc added and finally nickel chloride or potassium nickel sulphate, until the solution becomes green. In this solution the objects to be plated are boiled with fragments of zinc foil during fifteen minutes. The plating is polished with levigated chalk.

#### Nickel Plating Solution.

Double nickel and ammonium sulphate.....5 to 8 parts  
Water .....100 parts

Dissolve the nickel double salt in the water, with the aid of heat. Cautiously add ammonia water, or ammonium sulphate, until the solution is neutral to test paper. This solution should be maintained as nearly neutral as possible in use.

#### Nickel Plating Solution.

Nickel acetate.....2¼ parts  
Calcium acetate.....2½ parts  
Water .....100 parts

To each gallon of this solution add 1 fluid ounce acetic acid (1.047 sp. gr.).

To prepare this bath, dissolve about the same quantity of dry nickel carbonate as that called for in the formula (or three-quarters of that quantity of the hydrated oxide) in acetic acid, adding the acid cautiously, and heating until effervescence has ceased and solution is complete. The calcium acetate may be made by dissolving the same weight of calcium carbonate (marble dust) as that called for in the formula (or one-half that quantity of caustic lime), and treating it in the same manner. Mix the two solutions, dilute to the required amount by the addition of water, and then to each gallon of the solution add a fluid ounce of free acetic acid, as prescribed. (Potts' solution.)

#### Nickel Plating Solution.

Nickel and ammonium sulphate ..... 10 parts  
Ammonium sulphate..... 4 parts  
Citric acid..... 1 part  
Water .....200 parts

The solution is made with the aid of heat, and, when cool, small fragments of ammonium carbonate should be added until the bath is neutral to test paper.

#### Nickel Plating Bath.

For plating iron or steel.—Dissolve 6 parts of the double sulphate of nickel and ammonium (the commercial salt, obtainable from wholesalers) and 1 part of ammonium sulphate, in 128 parts of distilled water, by the aid of heat, by boiling for fifteen minutes. Let cool before using.

For brass, copper, tin, britannia ware, etc.—Dissolve 4.5 parts of nickel and ammonium sulphate, and 1 part of ammonium sulphate in 119 parts of distilled water as before.

To replate articles that have once been plated, first strip off the old plating, using a bath composed of 4 parts of potassium dichromate, 5 parts sulphuric acid and 25 parts of water (the ordinary battery fluid). Let the articles remain in this bath until all traces of the old plating are removed. Wash them first with water containing a small amount of potassium bicarbonate and afterwards with plenty of clear water; dry and polish with flour of emery, chalk and rouge. If putz-pomade be used, afterward wash the articles with soap and water to remove the last particles of grease, and leave them for a few minutes in a strong solution of bicarbonate of sodium, remove and rinse with plenty of water.

For a battery use from four to eight Bunsen cells, connected for intensity, or (for small articles) two Grove cells, similarly connected. To apply a good heavy coating requires an immersion of from six to eight hours. For the anode use a plate of pure nickel.

#### Nickel Plating Steel or Iron Without a Battery.

Add to 10 per cent solution of pure zinc chloride enough nickel sulphate solution to impart a distinct green color, and boil in a porcelain vessel. Ignore any deposit. Suspend the articles to be plated (absolutely free from grease or soap) in the boiling solution for thirty to sixty minutes. Remove, wash in thin chalky water, rinse, and dry. Polish with chalk.

#### Nickel Plating of Wood.

The articles which are to be plated with nickel must first be coated with metal. In the process which is most commonly employed three solutions are made use of, namely: (a) 1½ grams of caoutchouc slicings are dissolved in 10 grams of carbon disulphide and 4 grams of melted wax are poured into the solution; a mixture consisting of 5 grams phosphorus in 60 grams of carbon disulphide, with 5 grams of turpentine and 4 grams of powdered asphalt, is then added and the whole shaken; (b) 2 grams of silver nitrate are dissolved in 600 grams of water; (c) 10 grams of chloride of gold are dissolved in 600 grams of water. The conducting wires are attached to the article, which after being immersed in the first solution, is allowed to dry. The second solution is poured over it, and it is kept suspended until the surface has a dark lustre, when it is rinsed with water and treated in a similar manner with the third solution. The surface has now a yellowish sheen, and the wood is sufficiently prepared for electrolytic deposition. Langbein's dry process consists in quickly pouring over the article a collodion solution of potassium iodide, diluted with an equal volume of ether-alcohol; when the layer is just about to set the wood is laid in a weak



solution of silver nitrate, light being excluded. As soon as a yellow color appears the wood is rinsed, exposed to sunlight and covered with copper. It is then ready to be nickel plated. The wood may also be treated with immersion in an ethereal solution of paraffin or wax, and when the ether has evaporated fine graphite is powdered over it, or the wax is covered with bronze powder and all unevenness of surface removed. When the articles are to be electrolytically coated with copper they are placed in a bath the composition of which varies with the current employed; generally it consists of 30 liters of 18 per cent copper sulphate solution and 1½ liters of 66 per cent sulphuric acid. When a sufficient amount of copper is deposited the articles are ground, polished and nickel plated in a bath composed of 500 grams of ammonium nickelous sulphate, 50 grams of ammonium sulphate and 10 liters of distilled water. If blue litmus paper be quickly reddened by this solution the acidity is reduced to such a point by addition of ammonium chloride that the reddening is only slowly developed.

#### Gilding Steel.

Polished steel may be gilded by means of the ethereal solution of gold. Dissolve pure gold in nitrohydrochloric acid, evaporate gently to dryness, so as to drive off the superfluous acid, redissolve in water, and add three times its bulk of sulphuric ether. Allow to stand for twenty-four hours in a stoppered bottle, when the ethereal solution of gold will float on top of the liquid. Polished steel dipped in this solution is at once beautifully gilded, and by tracing patterns on the surface of the metal with any kind of varnish, beautiful devices in plain metal and gilt may be produced. For other metals the electro process is the best.

#### Gold Bronzing for Iron.

A superior gold bronzing for iron may be obtained by dissolving three ounces of finely powdered shellac in 1¾ pints of alcohol. Filter the solution through linen and with the filtrate triturate enough Dutch gold (alloy of copper and zinc) to give a lustrous appearance. Brush the iron, previously polished and heated, over with vinegar and apply the color with a brush. After the gilding is dry coat it with a mixture of copal and amber lacquer.

#### Gilding Brass and Copper.

Convert 6¼ pennyweights fine gold into chloride, dissolve in 1 quart distilled water, add 1 pound potassium bicarbonate and boil the mixture for 2 hours. Immerse the articles to be gilded in the warm solution for a few seconds up to 1 minute, as necessary.

#### Gilding Brass and Copper.

Dip the articles in a solution of mercury protonitrate, then into the gilding liquid. During the action which takes place, the film of mercury, which is electro-positive to the gold, dissolves in the auriferous solution, and a film of gold is deposited in its place.

#### Gilding Brass and Copper.

Dissolve in nitrohydrochloric acid 1 grain fine gold, previously rolled very thin, in a porcelain capsule heated on the sand bath and concentrated till it is the color of ox blood. Add 1 pint distilled water, hot, in which have been dissolved 4 grains potassium cyanide. Stir with a glass rod and filter through unsized paper. Heat a little above lukewarmness, and the articles to be gilded are immersed in it and supported on a piece of very clean zinc.

#### Gilding Silver.

Dissolve equal parts of corrosive sublimate and ammonium chloride in nitric acid, add some grain gold to the mixture and evaporate to half its bulk. Apply while hot to the surface of the silver article.

#### To Deposit Gold on Glass.

The gilding liquid, which must not be mixed until the moment in which it is to be used, consists of a solution of 7 parts of gold chloride in 1,000 parts of freshly distilled or redistilled water; and another solution of 50 parts of caustic soda in distilled water. These solutions are to be mixed in the proportion of 4 parts of the gold solution to 1 part of the sodium.

Several reducing agents may be employed. The most energetic is concentrated, chemically pure glycerin, of which 3 parts by volume will reduce 1,000 parts of the gilding liquid. Glucose also acts energetically, especially in solution in alcohol. For 1,000 parts of the gold mixture use 5 parts (by volume) of 90 per cent alcohol, and the same quantity of a 40 per cent aqueous solution of glucose. This agent gives the gilding a red or reddish tint, resembling California gold. A deep yellow color is produced by using a reducing solution consisting of 12 parts (by weight) of white sugar, dissolved in 100 parts of distilled water. To this add 2 parts of chemically pure nitric acid (sp. gr. 1.34), and boil for 15 minutes. Before using add an equal volume of 90 per cent alcohol.

On the addition of the reducing agent, the metal separates and is deposited in all directions, gilding the sides and bottom of the retainer, but the most perfect deposition occurs from below upward, and hence to produce a faultless gilded surface it is necessary that the object to be gilded float on the top of the liquid. All of the care and precautions recommended in the case of the deposition of silver apply in the matter of gilding. The surface to be acted on must be chemically clean if success is desired.

#### Silvering Glass Globes.

Lead .....	1 part
Tin .....	1 part
Bismuth .....	1 part
Mercury .....	12 parts

Melt the lead and tin together in a new iron ladle (a very clean old one will answer), skim off the dross and quickly add the bismuth, let melt, again skim and remove from the fire. Before the metal begins to set add the mercury and stir in. Be careful not to breathe the fumes, as they are poisonous. To use the amalgam, pour it into the globe, close the aperture and revolve the globe rapidly so that the amalgam will come into contact with every part of the container. A good deal of skill is necessary to make a good job.

#### Silvering Glass Globes.

Dissolve 48 grains of silver nitrate in 1 ounce of distilled water. Precipitate by adding ammonia water, and continue to add ammonia water until the precipitate is nearly, but not quite, redissolved. Filter, and add distilled water (through the same filter) until 12 ounces of filtrate are obtained. This is the silvering solution.

The reducing solution is made as follows Dissolve 12 grains of Rochelle salt (sodium and potassium tartrate) in 1 ounce of distilled water. Boil in a flask, and while boiling add 2 grains of crystallized silver nitrate, dissolved in 1 dram of distilled water. Continue the boiling for five minutes, remove, let cool, filter, and add, as before, sufficient

distilled water to bring the filtrate up to 12 ounces.

To silver, pour into the globe equal quantities of the two solutions (the amount will depend on the size of the vessel), revolve so as to mix the solutions, and add distilled water until the globe is exactly filled. Then place in the sun, or in some warm place (120° F.), and let stand until the silver is deposited in an opaque film over the whole surface of the glass. In good, warm, summer sunlight this will take from twenty minutes to half an hour. When the deposit is complete, pour out the residual fluid, place the globe so that it will drain thoroughly, and when completely dry close the aperture and seal it hermetically. The globe should be chemically clean on the inside. To insure this use any strong mineral acid, making it touch every part; pour out, wash with solution of potassa, and rinse twice with distilled water. Finally, rinse with strong alcohol, and pour the silvering liquids in at once, without drying off the alcohol.

#### Resilvering Mirrors.

As mirrors are made by backing the glass with a film of silver or with an amalgam of mercury, the character of the "resilvering" process must be selected accordingly. But whatever method is employed, great stress is laid on the absolute cleanliness of the glass, not only from dirt and grease, but also freedom from any organic matter. In fact, herein lies the success of any method employed for this purpose. The following formula has been recommended as answering most of the requirements: Make three solutions, as follows:

(1)

Silver nitrate.....200 grains  
Stronger ammonia water, q. s.  
Distilled water, q. s.  
Alcohol ..... 1 fl. ounce

Dissolve the silver nitrate in 6 fluid ounces of distilled water, and gradually add the ammonia water until the precipitate first formed is dissolved—no more. Any excess of ammonia must be guarded against. Then filter through a double filter paper, adding distilled water to make 12 ounces; then add the alcohol. Place in a clean bottle, shake thoroughly and keep in a cool, dark place.

(2)

Rochelle salt..... 12 grains  
Silver nitrate..... 16 grains  
Distilled water, q. s.  
Alcohol ..... 1 fl. ounce

Dissolve the Rochelle salt in 8 ounces of distilled water in a porcelain dish, and boil. While boiling, add gradually the silver nitrate dissolved in 1 ounce of distilled water. Continue to boil until the solution begins to turn gray; add 6 ounces of distilled water and filter, making up to 12 fluid ounces with distilled water. Add the alcohol and bottle, keeping the solution in a cool, dark place. Allow both of these solutions to stand five or six hours before using.

Mix equal parts of the above solutions and pour the mixture on the glass until covered. Allow to stand for one hour or more; pour off the solution, rinse with clear water, and before drying, amalgamate with the following solution:

(3)

Potassium cyanide..... 8 grains  
Mercury cyanide..... 16 grains  
Water, q. s.

Dissolve the salts separately in 8 ounces of water and add to distilled water to make 1 gallon. Place this solution in a sprinkler, and sprinkle the silver film on the glass

until it turns a lead color; then rinse immediately and stand the glass on end to dry. Paint over the deposited film with asphaltum varnish, using a soft brush. The silver coating must not be touched before it is painted.

A varnish for the backs of silvered mirrors consists of dammar gum, 20 parts; asphalt, 3 parts; gutta-percha, 3 parts; benzole, 75 parts. Mix and dissolve. To use varnish it may be applied with a soft brush, or pour it over the silvered surface and move the plate back and forth until the varnish is evenly distributed over the back of the glass.

#### Silvering Mirrors.

First prepare the following five solutions: (1) Silver nitrate, 60 grains in 10 drams distilled water; (2) ammonium nitrate, 146 grains in sufficient distilled water to measure 600 minims; (3) solution of caustic soda, specific gravity 1.050; (4) white rock candy, 5 drams, tartaric acid, 20 grains, distilled water, 5 drams, dissolve, boil constantly for one hour, then bring to the measure of 50 drams; (5) cupric tartrate, 42 grains, distilled water, 4 drams, mix and add solution of caustic soda, drop by drop, until a clear solution is effected, then bring to measure of 8 ounces. Now make Solution No. I. by mixing together 50 volumes of solution (2), 70 volumes of solution (1), and 375 volumes of solution (3); Solution No. II. by mixing 1 volume of solution (4), 1 volume of solution (5), and 8 volumes of water.

The silvering liquid is made by combining immediately before using, 50 volumes of Solution No. I. and 10 volumes of Solution No. II. and 250 or 300 volumes of distilled water; pour over the polished glass surface and allow to stand a quarter or half an hour, when the silvering will be completed. Wash, dry and varnish.

#### For Silvering Glass.

1. Reducing solution.—In 12 ounces of water dissolve 12 grains Rochelle salt, and boil. Add, while boiling, 16 grains of silver nitrate dissolved in 1 ounce of water, and continue the boiling for 10 minutes more, then add water to make 12 ounces.

2. Silvering solution.—Dissolve 1 ounce silver nitrate in 10 ounces water; then add ammonia water until the brown precipitate is nearly but not quite all dissolved; then add 1 ounce alcohol and sufficient water to make 12 ounces.

To silver: Take equal parts of numbers 1 and 2, mix thoroughly, and lay the glass face down, on the top of the mixture white wet, after it has been carefully cleaned with soda and well rinsed with clean water.

Distilled water should be used for making the solutions. About 2 drams of each will silver a plate 2 inches square. The dish in which the silvering is done should be only a little larger than the plate. The solution should stand and settle for two or three days before being used, and will keep good for a long time.

#### Silvering Glass.

Dissolve 10 parts of silver nitrate in 30 parts of water, add 10 parts of spirit of ammonia and 20 parts of alcohol, and after three hours filter. Add to the filtrate a solution of 2½ parts of grape sugar in 25 parts of water. To silver the inside of a flask, introduce a little of the solution, immerse the flask in water heated to 158° F., shaking the flask so as to spread the solution well over its surface.

#### Hard Solder.

Copper ..... 58 parts  
Zinc ..... 42 parts

Melt together.

**Hard Solder.**

Brass .....	85 parts
Zinc .....	15 parts

Melt together.

**Hard Solder.**

Zinc .....	49 parts
Copper .....	44 parts
Tin .....	4 parts
Lead .....	2 parts

Melt together.

**White Solder.**

Copper .....	57 parts
Zinc .....	28 parts
Tin .....	15 parts

Melt together.

**White Hard Solder.**

Brass .....	12 parts
Zinc .....	4 to 7 parts
Tin .....	1 part

Melt together.

**White Hard Solder.**

Brass .....	11 parts
Zinc .....	1 part
Tin .....	2 parts

Melt together.

**Copper Solder.**

Copper .....	5 parts
Lead .....	1 part

Melt together.

**German Silver Solder.**

Copper .....	4½ parts
Zinc .....	7 parts
Nickel .....	1 part

Melt together.

**German Silver Solder.**

Copper .....	35 parts
Zinc .....	56 parts
Nickel .....	9 parts

Melt together.

**Gold Solder.**

Gold .....	22 parts
Silver .....	2 parts
Copper .....	1 part

Melt together.

**Silver Solder.**

Copper .....	1 part
Silver .....	4 parts

Melt together.

**Silver Solder.**

Copper .....	1 part
Silver .....	20 parts
Brass .....	9 parts

Melt together.

**Soft Solder.**

Bismuth .....	50 parts
Tin .....	25 parts
Lead .....	25 parts

Melt together.

**Soft Solder.**

Bismuth .....	50 parts
Tin .....	30 parts
Lead .....	20 parts

Melt together.

**Soldering Fluid.**

Commercial hydrochloric acid .....	4 ounces
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Zinc (to neutralize), a sufficient quantity.

Dissolve the zinc in the acid to neutralization, then add to each ounce of the solution thus obtained:

Ammonium chloride..... 1 dram

Mix.

Sprinkle a little powdered rosin on the surface of the metal to be soldered.

**Stove Blacking.**

Plumbago, 2 pounds; water, 8 ounces; oil of turpentine, 8 ounces; sugar, 2 ounces. knead thoroughly and keep in tin boxes. Apply with a brush.

**Stove Blacking.**

Turpentine and black varnish, put with any good stove polish, is the blacking used by hardware dealers for polishing heating stoves. If properly put on, it will last throughout the season.

**Liquid Stove Polish.**

Bone black, 2½ parts; pulverized graphite, 2½ parts; copperas, 5 parts; water, enough to form a creamy paste.

**Liquid Black Lead Polish.**

Pulverized black lead, 1½ pounds; turpentine, 6 ounces; water, 6 ounces; sugar, 1¼ ounces.

**Bone Black Polish (for Stoves).**

Mix 2 parts copperas, 1 part powdered bone black, and 1 part black lead with enough water to give proper consistency, like thick cream. Two applications are to be recommended.

**Paste Stove Polish.**

Pulverized black lead, 2 pounds; oil of turpentine, 2 gallons; water, 2 ounces; sugar, 2 ounces. Mix.

**Stove Polish.**

Plumbago made into a paste with sodium silicate solution.

**Graphite Stove Polish.**

Graphite, in powder; grind in a mill with water. Use with water first, then dry and polish.

**Graphite Stove Polish.**

Ceresin .....	12 parts
Japan wax.....	10 parts
Oil of turpentine.....	100 parts
Best lampblack.....	12 parts
Levigated graphite.....	10 parts

Melt the ceresin and wax together, remove from the fire, and when half cooled down stir in the lampblack and graphite, previously rubbed up with the oil of turpentine. Stir until the mixture is cold.

**Asphaltum Stove Polish.**

Asphaltum .....	5 pounds
Boiled linseed oil.....	2 pounds
Oil of turpentine.....	1 gallon

Melt the asphaltum and add the oil and turpentine.

## TOBACCO AND CIGAR FLAVORS.

**Cigar Flavoring.**

Macerate 2 ounces of cinnamon and 4 ounces of tonka beans, ground fine, in 1 quart of rum.



**Cigar Flavoring.**

Extract of vanilla.....	4 ounces
Alcohol .....	$\frac{1}{2}$ gallon
Jamaica rum.....	$\frac{1}{2}$ gallon
Tincture of valerian.....	8 ounces
Caraway seed.....	2 ounces
English valerian root.....	2 ounces
Bitter orange peel.....	2 ounces
Tonka beans.....	4 drams
Myrrh .....	16 ounces

Soak the myrrh for 3 days in 6 quarts of water, add the alcohol, tincture of valerian, and extract of vanilla, and after grinding the other ingredients to a coarse powder, put all together in a jug and macerate for two weeks, occasionally shaking; lastly, strain.

**Cigar Flavoring.**

Into a bottle containing  $\frac{1}{4}$  pint of French brandy put  $\frac{1}{4}$  ounces of cascarrilla bark and  $\frac{1}{4}$  ounces of vanilla previously ground with  $\frac{1}{2}$  pound of sugar; carefully close up the flask and distil in a warm place. After 3 days pour off the liquid, and add  $\frac{1}{4}$  pint of mastic extract. The finished cigars are moistened with this liquid, packed in boxes, and preserved from air by a well-closed lid. The cigars are said to acquire a pleasant flavor and mild strength through this treatment.

**Cigar Flavoring.**

Orris root.....	4 ounces
Valerian root.....	4 ounces
Tonka .....	4 ounces
Vanilla .....	2 drams
Jamaica rum.....	8 pints

Mix.

**Cigar Flavoring.**

Extract of licorice.....	1 dram
Extract of vanilla.....	$\frac{1}{4}$ dram
Extract of tonka.....	5 drops
Tincture of benzoin.....	3 drops
Balsam of peru.....	3 drops
Simple syrup.....	10 drops
Flour .....	5 grains
Caramel, enough to color.	

Mix.

**Cigar Flavoring.**

Extract of licorice.....	1 dram
Extract of vanilla.....	$\frac{1}{4}$ dram
Extract of tonka.....	5 drops
Flour .....	5 grains
Dextrin .....	5 grains
Acacia .....	5 grains

Mix.

**Cigar Flavoring.**

The best coloring for darkening light wrappers is probably a concentrated infusion, almost a fluidextract, made from the stems and cuttings of dark tobacco. The same obtained from fine Havana tobacco is employed for flavoring "fillers." This process may be called a natural flavoring. For reaching the same end, by means of an artificial flavoring, the following is recommended:

Fluidextract of valerian..	1 ounce
Tincture of tonka beans..	8 ounces
Alcohol, enough to make..	16 ounces

Mix.

**Cigar Flavoring.**

Tincture of valerian.....	4 drams
Butyric ether.....	4 drams
Tincture of vanilla.....	2 drams
Spirit of nitrous ether....	1 dram
Alcohol .....	5 ounces
Water, enough to make...	1 pint

Mix.

**Cigar Flavoring.**

Valerianic acid.....	3 drams
Acetic ether.....	40 minims
Butyric ether.....	10 minims
Alcohol .....	4 pints

Mix.

**Tobacco Flavors.**

Home-made tobacco flavors do not, as a rule, give very satisfactory results. The flavors manufactured after secret and proprietary formulas represent much labor and experimenting before the proper combination was effected. Nearly all these formulas contain valerian in some form.

**Tobacco Flavor.**

Cascarilla bark.....	1 ounce
Fluidextract of valerian..	1 ounce
Tonka bean.....	2 drams
English rum.....	3 ounces

Mix and macerate three or four days, when the flavor is ready for use.

**Tobacco Flavor.**

Some tobaccos are very strong, and to extract some of the dark color and rank flavor are soaked over night in salt water, dried, and flavored with a preparation consisting of:

Tincture of cascarrilla .....	6 ounces
Tincture of tonka .....	4 ounces
Tincture of tolu .....	2 ounces
Tincture of orris .....	2 ounces
Tincture of valerian .....	2 ounces
Oil of nutmeg .....	$\frac{1}{2}$ ounce
Oil of cloves .....	$\frac{1}{4}$ ounce
Oil of rhodium .....	1 dram

A number of flavors sold under such names as "Yara," "Havana" or "Spanish" are generally made by procuring tobacco of fine quality and making from it a strong fluid-extract or tincture with diluted alcohol, and perfuming it with certain volatile oils and essences.

**Spotting Cigar Wrappers.**

Tobacco leaves used for cigar wrappers may be "spotted" by sprinkling upon them a chlorinated solution like Javelle water or Labarraque's solution. Solutions containing sulphurous acid gas have been similarly recommended. The following formula is for a liquid used in the factories at St. Louis: Sodium carbonate, 3 parts; calcium chloride (chlorinated lime), 1 part; hot water, 8 parts. Put the sodium carbonate in a pot, pour hot water over it, and boil till dissolved. Let boil for four or five minutes longer, add the calcium chloride, and at once remove from the fire. When cool, decant into earthenware or stoneware jugs, cork tightly, and keep in a cool place. The corks of jugs not intended for immediate use should be covered with a bit of bladder or strong parchment paper, and tightly tied down to prevent the escape of gas, and consequent weakening of the bleaching power of the fluid. The prepared liquid is sprinkled on the tobacco, the latter being then exposed to light and air, when the disagreeable odor produced soon disappears.

**Spotting Cigar Wrappers.**

Place two ounces of finely powdered ammonium carbonate in a shallow dish and pour upon it 16 fluid ounces of solution of hydrogen peroxide; effect a solution of the salt by stirring, and by the use of a small whisk broom scatter the mixture upon the leaf and let dry. When these substances are put up for sale, place the ammonium salt in a glass bottle well stoppered, bearing a label with directions to mix with the solution which is in

a separate bottle. Care must be taken that the hydrogen peroxide solution is of full strength.

#### Stuffing Birds and Animals (Taxidermists' Preparation).

Camphor .....	1 ounce
Corrosive sublimate.....	½ ounce
Alum .....	½ ounce
Sulphur .....	1 ounce

All finely powdered and mixed.

#### Stuffing Birds and Animals.

Tanners' bark, dried and powdered .....	2 ounces
Burnt alum.....	1 ounce
Snuff .....	1 ounce

Mix, and add:

Sulphur .....	1 dram
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#### Arsenical Soap, Becœur's (Taxidermists' Soap).

Camphor .....	5 drams
Arsenic .....	4 ounces
White soap.....	4 ounces
Potassium carbonate.....	12 ounces
Air-slaked lime.....	4 ounces

Mix and make a stiff paste with a little water.

#### Soap Bubble Solution.

One gram dry Marseilles soap is dissolved in 100 grams warm water; this is filtered, and to every 100 cubic centimeters of the solution 400 grams white sugar are added. Bubbles made with this liquid will last for several hours.

#### Soap Bubble Solution.

Castile soap, shavings.....	1½ ounces
Glycerin .....	15 ounces
Water .....	20 ounces

The bubbles will sometimes last several hours if properly protected.

#### Soap Bubble Solution.

Yellow rosin .....	1 ounce
Potassium carbonate.....	1 ounce
Water .....	10 ounces

Boil together. For use, dilute with four times its bulk of water.

#### Bubbles, Collodion Film Mixture.

Ether (by weight).....	89 parts
Absolute alcohol.....	5½ parts
Photographic gun cotton.....	5½ parts

Dissolve and decant. To 100 parts of clear solution add 70 to 100 parts pure castor oil.

#### Pharaoh's Serpents' Eggs—Non-Poisonous.

Potassium dichromate.....	2 ounces
Potassium nitrate.....	1 ounce
White sugar.....	2 ounces

Pulverize the ingredients separately, mix well, and press into little paper cylinders. Keep in a dry place and from light.

#### Sea Water for Aquaria.

Sodium chloride.....	81 parts
Magnesium sulphate.....	7 parts
Magnesium chloride.....	10 parts
Potassium chloride.....	2 parts
Water .....	3,500 parts

Mix and dissolve.

#### Artificial Sea Salt.

	Parts.	Parts.
Sodium chloride.....	800	500
Magnesium chloride.....	110	100
Calcium chloride.....	20	10
Magnesium sulphate.....	65	30
Potassium iodide.....	2	1
Potassium bromide.....	3	1

These are typical formulas, and very nearly represent the actual constituents of sea water. sea water.

#### Removing Tattoo Marks.

The skin to be decolorized is first washed with a concentrated solution of tannic acid, and then closely punctured with a set of needles, such as tattooers use. A crayon of silver nitrate is next thoroughly rubbed over the area, and after a moment the skin is dried off, when it will be found that the punctures are deeply blackened by the formation of silver tannate in the superficial layers of the skin. The cauterization is said to result in an inflammatory reaction for a couple of days, and subsequently in the formation of a crust of thin eschar, which separates spontaneously in from fourteen to eighteen days, leaving beneath it a superficial red cicatrix, which gradually loses its color, and at the end of a few months is scarcely perceptible. It is not expedient to attack at one sitting an area larger than a ten cent piece, lest the inflammation provoked should be too severe, and interfere with the pursuance of the daily duties of the individual. The only dressing after the little operation consists in keeping the part covered with tannin.

#### Removing Tattoo Marks.

Anesthetize the washed and shaved part with ethyl chloride spray, and tattoo glycerol of papain into the colored parts. Follow this with a dressing of glycerol of papain, antiseptic gauze, and adhesive plaster. Keep this on for three days without disturbing, then cover with adhesive plaster. A scab forms, and when it drops off the marks have generally disappeared.

#### To Set Plaster of Paris Quickly.

Add a small proportion of potassium sulphate. This makes it very firm. Slaked lime is the material employed to make it set slowly. The proportion of either of these ingredients depends on the time required.

#### To Make Plaster Set Slower.

Mix it with 2 or 4 per cent of powdered althaea root before adding the water. This not only retards the hardening of the plaster, but also enables it to be cut, filed, sawed and turned. An addition of 8 per cent of althaea powder retards the complete setting of the plaster for about one hour, so that the mass can be used for any purpose where it is to remain plastic.

#### To Make Plaster Set Hard.

Mix best plaster of paris with 60 per cent (more or less, according to effect ascertained by preliminary experiment) of a very finely powdered marble (calcium carbonate), or add to it about 6 per cent powdered alum, or about the same amount of ammonium chloride before mixing with water.

#### To Crystallize Grass.

Blue.

Blue vitriol.....	1 pound
Boiling water.....	1 pint

Orange.

Potassium dichromate.....	1 pound
Boiling water.....	1 pint

White.

Alum .....	1 pound
Boiling water.....	1 pint

Make separate baths and let the water cool slowly for forming small crystals. Larger

ones are formed by hastening the cooling. It usually takes about 24 hours.

#### Metallic Vegetation.

(Lead tree; Arbor Saturni.)

Sugar of lead..... 1 ounce  
Distilled water..... 1½ pints  
Acetic acid, a few drops.  
Dissolve, place the liquid in a clear white glass bottle, and suspend a piece of zinc in the solution by means of a thread.

#### Metallic Vegetation.

(Silver tree; Arbor Dianae.)

Silver nitrate..... 20 grains  
Water..... 1 fl. ounce  
Dissolve, and: add  
pure mercury..... ½ dram

#### Metallic Vegetation.

(Tin tree; Arbor Jovis.)

Tin chloride..... 3 drams  
Nitric acid..... 10 to 15 drops  
Distilled or rain water... 1 pint  
Dissolve in a white glass bottle, and hang in it by a thread, a small rod of zinc.

In the solutions made as directed above, the metals are precipitated in a very beautiful arborescent form. It is curious to observe the laminae shoot out, as it were, from nothing, assuming forms resembling real vegetation.

#### Chemical Gardens.

The so-called "chemical gardens" are made in various ways, and their beauty depends much on the care which is exercised in their preparation. They are simply crystals which assume pretty forms. A very attractive chemical garden is made by taking a wide-mouthed bottle, or better still, a candy jar in which is placed an inch or two of clean sand—white sand is preferable. Then place on the sand a few crystals of copper sulphate, iron sulphate and aluminum sulphate. These crystals should be partially covered with sand. Then mix 1 part of water with 3 parts of sodium silicate, and pour a sufficient quantity of the solution over the crystals to cover them to the depth of an inch or two. Let the jar stand perfectly quiet for a week, or until the silicate has united with the metals, and thereby formed beautiful crystals. Then syphon off the liquid and replace it with clear, soft water. Such a garden, if kept quiet and free from dust, will last for a long time.

#### Chemical Barometer.

Potassium nitrate..... ¼ dram  
Ammonium chloride..... ½ dram  
Camphor ..... 2 drams  
Rectified spirit..... 2 ounces

Put the mixture into a bottle 10 inches in length and ¾ inch in diameter, and cover the mouth with a piece of perforated bladder. If the weather promises to be fine, the insoluble matter will settle at the bottom of the tube, while the liquid remains pellucid; but previous to a change for rain the compound will gradually rise, the fluid remaining transparent. Twenty-four hours before a storm or very high winds, the substance will be partly on the surface of the liquid, apparently in the form of a leaf; the fluid in such cases will be very turbid, and in a state resembling that produced by fermentation.

#### Window Pane Barometer.

By painting the window pane or immersing paper or fabric in any one of the following solutions, different colors are exhibited upon

atmospheric changes, owing to the well-known properties of nickel and cobalt salts, which color in accordance with the variation or amount of moisture in the air:

No. 1.—Chloride of cobalt, 1 part; gelatin, 1 part; water, 100 parts.

No. 2.—Chloride of copper, 1 part; gelatin, 10 parts; water, 100 parts.

No. 3.—Chloride of cobalt, 1 part; gelatin, 20 parts; water, 200 parts; nickel oxide, .75 part; chloride copper, .25 part.

In damp weather, all will be colorless; in clear weather No. 1 will be blue, No. 2 yellow, and No. 3 green.

#### Cobalt Hygrometer.

Dip white blotting paper into the following mixture:

Cobalt chloride..... 1 ounce  
Sodium chloride..... 1 ounce  
Glycerin ..... 2 drops  
Mucilage of acacia..... 1 fl. dram  
Distilled water..... 5 fl. ounces

Exposed to the atmosphere, it becomes more or less reddish-colored in proportion to the moisture present.

#### Storm Glass.

Camphor ..... 2½ drams  
Saltpetre ..... 38 grains  
Ammonium chloride..... 38 grains  
Distilled water..... 9 fl. drams  
Rectified spirit..... 6 fl. drams

Mix.

#### Fruit Crystals.

There is a steady and growing demand for fruit crystals during hot weather, and the following formulas "go" very well. Tartaric acid in small crystals is used. The flavoring and coloring are mixed with the granulated sugar, the acid then added and the mixture dried:

#### Lemon Fruit Crystals.

Tartaric acid..... 3 pounds  
Granulated sugar..... 6 pounds  
Oil of lemon..... 2 ounces  
Rectified spirit..... 2 ounces  
Quinoline yellow, to color.

Mix.

#### Orange Fruit Crystals.

Tartaric acid..... 1 pound  
Granulated sugar..... 3 pounds  
Oil of bitter orange..... ½ ounce  
Rectified spirit..... 1 ounce  
Croceine orange, to color.

Mix.

#### Raspberry Fruit Crystals.

Tartaric acid..... 1 pound  
Granulated sugar..... 3 pounds  
Conc. essence of raspberry 2 ounces  
Raspberry coloring, a sufficiency.

Mix.

#### Strawberry Fruit Crystals.

Same as raspberry, but with 2 ounces of concentrated essence of strawberry in place of the raspberry essence.

#### Cherry Fruit Crystals.

Same as raspberry, but with 2 ounces of concentrated essence of cherry in place of raspberry essence.

#### Stone Ginger Beer Fruit Crystals.

Tartaric acid..... 1 pound  
Granulated sugar..... 7 pounds  
Essence of stone ginger  
beer ..... 8 ounces  
Essence of capsicum..... 1 ounce  
Oil of lemon..... ½ ounce

Mix.



### Fruit Crystals for Spiced Elderberry Wine (Non-Alcoholic).

Tartaric acid.....	1 pound
Granulated sugar.....	5 pounds
Essence of spiced elder- berry .....	6 ounces
Essence of cognac.....	1 ounce
Raspberry coloring.....	a sufficiency.

#### Mix.

In each case 2 ounces of crystals go with 1 pound of sugar and a pint of water to make a syrup.

#### Crystal Ornaments.

Alum .....	1 ounce
Magnesium sulphate.....	1 ounce
Zinc sulphate.....	1 ounce
Copper sulphate.....	1 ounce
Iron sulphate.....	1 ounce
Sodium sulphate.....	1 ounce
Potassium sulphate.....	1 ounce

Crush the salts, mix them together and dissolve them in as little boiling water as possible (about a pint). Stand the mixture in a warm place, where it cannot be affected by dust and where it will not be agitated. After due evaporation has taken place the whole will begin to shoot into crystals. The color and peculiar form will distinguish each crystal, and the whole will together form a beautiful and pleasing object, which, when intended for preservation, should be placed under a glass shade.

#### Incombustible Wick.

Fine wood sawdust.....	4 parts
Powdered fireclay.....	2 parts
Powdered glass.....	1 part
Cotton or cotton dust.....	1 part
Sea sand.....	6 parts

This mixture, moistened, dried and fired at a full red heat for half an hour, is stated to yield a very permanent and porous material for lamp wicks.

#### Stamping Powders.

Ultramarine, to which has been added a small proportion of powdered rosin, is generally used for stamping embroidery patterns on white goods. The powder is dusted through the perforated pattern, which is then covered with a paper and a hot iron passed over it to melt the rosin and cause the powder to adhere to the cloth. The following are said to be excellent powders:

#### Stamping Powder, White.

One part each of rosin, copal, dammar, mastic, sandarac, borax, and bronze powder, and 2 parts white lead.

#### Stamping Powder, Black.

Equal parts rosin, dammar, copal, sandarac, Prussian blue, ivory black, and bronze powder.

#### Stamping Powder, Blue.

Equal parts rosin, dammar, copal, sandarac, Prussian blue, ultramarine and bronze powder.

In all these powders the gums are first to be thoroughly triturated and mixed by passing through a sieve, and the other ingredients carefully added. Other colors may be made by using chrome yellow, burnt or raw sienna, raw or burnt umber, vandyke brown, etc. For stamping fabrics liable to be injured by heat, the stamping is done by moistening a suitable powder with alcohol and using it like a stencil ink. White lead gives good results in this way.

#### Transfer Paper.

Well rub the surface of thin post or tissue paper with black lead, vermilion, red chalk or any coloring matter. Wipe well off with a clean rag and it is then ready for use.

#### Tracing Paper.

It is stated that the Austrian hydrographic bureau adopts the following method of making paper transparent for copying drawings: The sheet of paper being placed over the drawing to be copied, it is lightly rubbed with a ball of cotton saturated with pure benzine. The tracing can then be readily made, owing to the resulting transparency, and the benzine, on evaporating, leaves the paper opaque as before, and without any trace of odor. Absolute purity of the benzine, however, must be insisted upon to secure good results.

#### Carbon Tracing Paper.

Lard .....	6 parts
Yellow wax.....	1 part
Lampblack .....	1 part

The melted fats are gradually poured into the warm mortar containing the lampblack, triturating well all the time. While still fluid apply with a brush to the paper, and wipe off any excess.

#### Wiggins' Rules for Doses.

1st. The dose of all infusions is 1 to 2 ounces, except digitalis, which is 2 to 4 drams.

2nd. All poisonous tinctures, 5 to 20 minims, except tincture of aconite, which is 1 to 5 minims.

3rd. All wines, from  $\frac{1}{2}$  to 1 fluid dram, except wine of opium, which is 5 to 15 minims.

4th. All poisonous solid extracts can be given in  $\frac{1}{2}$ -grain doses, except extract of calabar bean, which is  $\frac{1}{16}$  to  $\frac{1}{4}$  grain.

5th. All diluted acids from 5 to 20 minims, except hydrocyanic acid, which is 2 to 8 minims.

6th. All waters from 1 to 2 ounces, except cherrylaurel water and water of ammonia, which are 10 to 30 minims.

7th. All medicated syrups, 1 dram.

8th. All mixtures from  $\frac{1}{2}$  to 1 fluid ounce.

9th. All spirits from  $\frac{1}{2}$  to 1 fluid dram.

10th. All essential oils, 1 to 5 minims.

#### Sealing Wax Insoluble in Alcohol.

Beeswax, yellow.....	5 parts
Carnauba wax.....	1 part
Paraffin .....	1 part

Melt together and mix with—

Red lead.....	5 parts
Prepared chalk.....	2 parts

Heat the mixture under constant stirring until it thickens.

#### For Cleaning Playing Cards.

Bring to a boil one liter of water to which has been added 20 grams of soap bark. Continue ebullition for a few moments, then add 15 grams of starch, and the same quantity of borax, stirred up in a little water. Boil the mixture for about 10 minutes, then cool, filter, and preserve in a stoppered bottle. For use, rub the soiled surfaces of the cards lightly with a sponge saturated with the mixture.

#### Purifying Alcohol and Alcoholic Liquids in General.

Alcoholic liquids are freed from impurities by treatment with a basic tartrate, followed by a hyposulphite (thiosulphate). Potassium or sodium tartrate, or preferably, the double salt known as Rochelle salt, may be used.

Among the hyposulphites, those of barium and sodium have given excellent results. The alcoholic liquid, contained in a suitable closed vessel, is mixed with small quantities of the tartrate, being well agitated after each addition, until it reacts neutral or faintly alkaline to test paper. The impurities are now allowed to settle, which requires from a few hours to several days, according to circumstances; but in any case the operation is considerably hastened by the application of heat or by the action of light. Hyposulphite is now added in quantity equal to about one-third of the tartrate used. The liquid is well stirred and allowed to settle, when the clear portion may be drawn off and rectified in the usual way. This process is applicable to all kinds of alcoholic liquids, notably wines and rum, the flavor of which is greatly improved.

#### To Detect Alcohol in Oils.

Take a slim glass tube 8 or 10 inches in length, closed at one end, and as large as the finger. Put in an ounce or two of oil, paste a piece of paper on the outside of the glass, so that its lower edge will be even with the top of the oil. Then add two or three times as much soft water, and shake well for a few moments. When it has settled, in an hour or so, the water will have absorbed the alcohol from the oil, which will show proportionately below the line first fixed.

#### Deodorizing Carbon Disulphide.

Carbon disulphide may be deprived of its unpleasant odor by adding to 1 liter of the same  $\frac{1}{2}$  cubic centimeter bromine. The mixture is set aside for 3 or 4 hours, and the bromine removed by shaking with a slight excess of caustic potash or with copper turnings. If the liquid has become turbid during the process it may be cleared by shaking with a small quantity of calcium chloride and filtering. Carbon disulphide may also be treated with small quantities of lead peroxide, decanting the liquid from the precipitate, and rectifying. In both cases the result is a colorless liquid, of agreeable odor, and not in the least altered chemically.

#### To Deodorize Benzine.

The disagreeable odor of benzine can be removed by shaking repeatedly with plumbate of soda, made by dissolving oxide of lead in caustic soda and rectifying. Simply shaking with charcoal and filtering will partially remove the odor.

#### Purification of Benzine.

Potassium permanganate.. 1 ounce  
Sulphuric acid.....  $\frac{1}{2}$  pint  
Water .....  $3\frac{1}{2}$  pints

Mix the acid and water, and when the mixture has become cold, pour it into a 2-gallon bottle. Add the permanganate and agitate it until it is dissolved. Then add:

Benzine ..... 1 gallon

And thoroughly agitate. Allow the liquids to remain in contact for 24 hours, frequently agitating the mixture. Separate the benzine, and wash in a similar bottle with a mixture of

Potassium permanganate..  $\frac{1}{4}$  ounce  
Soda .....  $\frac{1}{2}$  ounce  
Water ..... 2 pints

Agitate the mixture frequently during several hours. Then separate the benzine and wash it thoroughly with water.

#### Deodorizing Kerosene.

Various processes have been devised for deodorizing kerosene, such as the addition of essential oils, artificial oil of mirbane, etc., but none of these methods seem to have proved entirely satisfactory. The addition of amyl acetate in the proportion of 10 grams to the liter (1 per cent.) has also been suggested, several experimenters reporting successful results therefrom. The statement has been published, that by agitation for several days with powdered calcium chloride, the disagreeable odor of kerosene may be removed, but it is also said that the oil cannot be completely deodorized. The addition of some of the substances named would be inadmissible where the oil is to be employed for medicinal purposes.

#### Paper or Pasteboard, Waterproof.

Mix 4 parts of slaked lime with 3 parts of skim milk, and add a little alum; then give the material two successive coatings of a mixture with a brush, and let it dry.

#### Impermeable Wrapping Paper.

Dissolve  $1\frac{1}{2}$  pounds of white soap in a quart of water; then dissolve 2 ounces of gum arabic and 6 ounces of glue in another quart of water. Mix the two solutions; warm the mixture; dip the paper in the liquid. Pass it between two rolls (a clothes wringer, for example), and allow to dry. In default of rolls, let the paper drip well, or, better, pass it between two sheets of dry paper. Then let it dry in a mild temperature.

#### Luminous Paper.

Dry thoroughly and mix by grinding 3 parts gelatin, 3 parts potassium dichromate and  $37\frac{1}{2}$  parts calcium sulphide. Stir 1 part of the powder with  $1\frac{1}{2}$  parts boiling water to a thickly fluid paint. Apply one or two coats with a brush to the paper or pasteboard to be made luminous.

#### Coloring Glass Globes.

Colored films for show globes may be prepared by Clague's process as follows: For a five-gallon show globe soak 1 ounce gelatin in water; dissolve 15 to 25 grains aniline dye in warm water, add to the softened gelatin and warm till melted; then add 1 dram carbolic acid. When the solution has cooled to about 150° F., pour it into the show globe. Place the show globe in a warm position until it has acquired a temperature of from 90° to 100° F., and then remove. Now keep turning it upside down and round about until the gelatin shows signs of setting, then put it on its stand and allow the jelly not adhering to the sides to settle to the bottom. Leave the stopper out for a few hours. If the first attempt is not a success, it is only necessary to put the show globe into a warm place and try again. The process is an easy one, and has been applied to half a dozen show globes with ease and success. As to the colors the following have been tried: Malachite green, a good color to work with, and strikingly like copper sulphate solution; about 25 grains to 6 ounces is required. The color fades somewhat, so that it is just as well to make it a trifle dark. Methylene blue, 15 grains, a rich color very like ammonio-copper sulphate. Methyl violet, 15 grains, a rich bluish-red; can be made to vary according to the dye used. Technically, R. means red; R.R., redder; R.R.R., still redder. The blue shades are similarly indicated by the affix B. Flamingo gives the nicest red. Browns may be obtained with Bismarck brown; brownish-yellow with the

same dye in a smaller proportion, but the colors are not so striking as those named earlier. Methyl orange is wanting in brightness and transparency. Of course, if the globe is exposed to the sun the film must be allowed to harden well before the show globe is placed in position. Carbolic acid or some preservative is required to prevent mould from liquefying the gelatin.

#### Glass Frosting Mixture.

A frosting mixture to be painted on the glass is composed of sandarac, 18 drams; mastic, 4 drams; ether, 24 ounces; benzine, 16 to 18 ounces. Of course, this application is not to be exposed to high temperature.

#### Coloring Incandescent Light Globes.

White shellac, 3 ounces; powdered resin, 1 ounce; benzoic, 1 dram; alcohol, 10 ounces; aniline dye, any color, enough. Dissolve and apply to the globes or bulbs.

#### Coloring Incandescent Light Globes.

First make a solution by mixing the white of one egg, previously beaten to a froth, with one pint of soft water. Filter, making sure that no bubbles remain on the surface of the liquid. The globes or bulbs should be carefully cleaned and polished, and then dipped into the albumen solution and hung up by a string to dry. After about half an hour again dip the bulbs into the solution to insure a perfect coating. When perfectly dry dip them into a coloring solution made by dissolving from 10 to 30 grains (according to the density of color desired) of any soluble aniline dye in 4 ounces of collodion. Hang up to dry. If the bulbs are not dark enough they can be dipped again after the first coat has become dry, which usually requires about six hours.

#### Coloring Incandescent Light Globes.

Dip the bulb into a saturated solution of alum and allow the liquid to dry on it. The solution may be colored with cochineal for red, turmeric for yellow, indigo for blue, and so on. Aniline dyes may be employed.

In using the solution, immerse the bulb in the liquid, then withdraw, and turn the bulb so that the coating will be evenly applied. Allow to dry. If a heavier coating is desired, the globe must be again dipped in the liquid.

#### Coloring Electric Light Globes.

Electric incandescent globes may be easily colored by dipping the globes into a thin solution of collodion previously colored to suit with aniline soluble in collodion. Dip and rotate quickly, bulb down, till dry. For office desks, room lights, and in churches it appears often desirable to modify the glaring yellowish rays of the incandescent light. A slight collodion film of a delicate bluish, greenish, or pink shade will do that. Another use of colored collodion is to color the show globes, customarily used in drug stores, on their inside, thus avoiding freezing and the additional weight of the now used colored liquids. Pour a quantity of colored collodion into the clean, dry globe, close the mouth and quickly let the collodion cover all parts of the inside. Remove the balance of the collodion at once, and keep it to color electric globes.

#### Ink for Photographs.

Iodine .....	1 part
Gum arabic.....	1 part
Potassium iodide.....	10 parts
Distilled water.....	30 parts

Mix. Use with a quill pen preferably. This ink produces white lines on the dark background.

#### Metallic Ink for Show Cards.

Any of the beautiful bronze powders now sold almost everywhere may be converted into inks for illuminating manuscripts, writing show cards, etc., by rubbing them up according to the following formula: Honey, 1 dram; alcohol, 1 dram; mucilage, 1 ounce; water, 8 ounces; bronze, 1 ounce. Rub the honey, alcohol and mucilage together in a mortar, then add the water. To be shaken before using.

#### Cotton Marking Ink.

Extract of logwood.....	8 pounds
Iron sulphate.....	1 pound
Copper sulphate.....	3 ounces
Potassium dichromate.....	1 ounce
Water, enough to make...	40 gallons

Dissolve the extract of logwood in about 10 gallons of hot water by pouring over the extract in a barrel, then add 25 gallons of water. Dissolve the other ingredients in about 5 gallons of water, and add to the logwood solution.

#### Arsenical Weed Killer.

Arsenous anhydride.....	28 ounces
Sodium hydroxide.....	17½ ounces
Crude phenol.....	2½ ounces
Water, enough to make...	100 ounces

Heat the arsenic with the caustic soda in 75 ounces of water until dissolved. Add the phenol and enough water to make the weight 100 ounces. One gallon of this is diluted with 25 gallons of water for use. It is claimed that 100 gallons of the diluted liquid is enough for 50 square yards.

#### Benzine Soap for Grease Spots.

Castile soap.....	150 parts
Alcohol, 95 per cent.....	600 parts
Benzine .....	1,000 parts
Oil of turpentine.....	100 parts
Dammar varnish.....	25 parts

Dissolve the soap in 500 parts of the alcohol in a warm bath, and, little by little, one-half of the benzine. Mix the remaining alcohol, benzine and turpentine, and add the mixture to the first solution, stirring constantly. Finally add the dammar and stir in. The addition of the dammar varnish is intended to give the finished product greater consistency.

#### Preparing Chlorophyll.

Pure chlorophyll was prepared by Dr. Schenck as follows: Extract fresh leaves of evergreen with boiling alcohol, filter the solution while hot, separate the crude chlorophyll precipitating on cooling, and purify by boiling with alcoholic solution of soda, filtering and precipitating by saturating with carbonic acid. Extract the precipitate with cold alcohol and precipitate by adding to the solution a saturated solution of sodium chloride. Dissolve the precipitate in boiling alcohol and evaporate the solution to dryness, whereby the sodium salt is obtained. Wash the latter with cold water, acidify with acetic acid, and then extract with ether. On evaporation the pure, amorphous green coloring matter is obtained. This is soluble in aniline, alcohol and ether, the solution being a bluish green and exhibiting a red fluorescence.

#### Acetone Collodion.

Pyroxylin .....	5 drams
Camphor .....	1 dram
Pure acetone.....	12½ ounces



Dissolve the pyroxylin and camphor in a clean bottle with 10 ounces of acetone, and add sufficient acetone to make the product measure 12½ ounces.

#### Acetone Collodion.

Pyroxylin .....	5 parts
Oil of cloves .....	2 parts
Amyl acetate .....	25 parts
Benzol .....	20 parts
Acetone, enough to make.....	100 parts

Dissolve the pyroxylin in 50 parts of acetone, add the oil of cloves, amyl acetate and benzol, and make up to 100 parts with acetone.

#### Liquid Veneer.

Gum anise, 8 pounds; clarified linseed oil, 3 gallons; litharge, ¼ pound; lead acetate, ¼ pound; iron sulphate, ¼ pound; oil of turpentine, 5½ gallons. Boil all together until the mixture strings, then mix well and strain. The aniline colors used to give such varnishes the desired shades are those known as "fat aniline colors" or "Sudan dyes." A small quantity of the desired color is mixed with a little oil of turpentine and then stirred into the varnish. These colors are not known as "oak stain" or "rosewood," but as reds, browns, etc. The proper proportions and blending would have to be learned from practice. In many instances a simple application of one of the stains employed by furniture makers to give cheaper woods the appearance of a more expensive or rare wood will answer the purpose.

#### Liquid Veneer.

Linseed oil .....	10 parts
Vinegar .....	5 parts
Hydrochloric acid.....	2 parts
Amyl acetate,	
Putty powder, of each, q. s.	

Mix. The last two ingredients are added as a "blind."

#### Local Anesthetic.

The following mixture has been recommended by a writer in a French medical journal as "absolutely harmless, and quite a small quantity is required":

Phenol .....	30 grains
Menthol .....	30 grains
Quinine hydrochloride.....	22 grains
Adrenalin (pur.).....	1/12 grain

A syrupy liquid is obtained, a few drops of which are applied to the parts to be anesthetized, by means of an absorbent wool swab on a holder. The result is said to be immediate. The mucous membrane becomes pale, contracts, and is insensitive. There is no caustic action, the menthol and phenol combine to produce an anesthetic effect, which is enhanced by the quinine.

#### Canary Food.

Sweet cayenne.....	4 ounces
Turmeric .....	3 ounces
Iron peroxide.....	1 ounce
Refined sugar.....	8 ounces

Mix.

#### Compound Menthol Ointment.

Chloral hydrate.....	2.30 grams
Menthol .....	4.60 grams
Methyl salicylate.....	9.40 grams
Hydrous woolfat.....	50.00 grams
White soft paraffin,	
enough to make.....	100.00 grams

Dissolve the chloral hydrate and menthol in the methyl salicylate, and mix with the hydrous woolfat and soft paraffin.

#### Compound Spray of Eucalyptus.

Oil of eucalyptus.....	2.100 grams
Thymol .....	0.345 grams
Menthol .....	2.860 grams
Oil of wintergreen.....	0.730 grams
Boric acid.....	0.800 grams
Glycerin of tannic acid	18.750 grams
Alcohol, 90 per cent,	
enough to make.....	100.000 grams

#### Compound Inhalant for Handkerchief.

Oil of pine.....	2 fl. drams
Terebene .....	2 fl. drams
Creosote .....	30 minims
Menthol .....	30 grains
Oil of cinnamon .....	10 minims
Oil of eucalyptus .....	1 fl. ounce

Sprinkle a few drops on a handkerchief or cotton wool, and inhale through each nostril separately; or put a teaspoonful into a pint of boiling water and inhale the vapors.

#### Ink for use with Stencil.

Boil 2 ounces of borax and 2 ounces of shellac in 25 ounces of water until dissolved, then withdraw from the fire; stir in 2 ounces of gum arabic, and add enough water to complete 25 fl. ounces; add lampblack enough to bring the preparation to a suitable consistency. When the ink is to be used with a stencil, it must be thicker than when it is to be applied with a marking brush. The ink thus made is black; for red, substitute Venetian red for lampblack; for blue, ultramarine, and for green, a mixture of ultramarine and chrome yellow.

#### One Solution Marking Ink.

Asphalt, in pieces.....	2 ounces
Benzol .....	8 ounces
Coal tar.....	8 ounces

Dissolve the asphalt in the benzol and add the coal tar. The ink is thinned with turpentine, and must be kept well corked. This ink does not spread in using, and is unaffected by light or chemicals.

#### Charcoal Pencils for Cutting Glass.

Wood charcoal.....	90 parts
Saltpetre .....	2 parts
Benzoin .....	1 part
Tragacanth .....	2 parts

Make into a paste; roll quickly into pencils; dry thoroughly. Start the crack with a file, and lead in the desired direction with the incandescent tip of the pencil.

#### Smoke Cartridges for Testing Drains.

Saltpetre .....	1 ounce
Manganese dioxide.....	½ ounce
Rosin .....	½ ounce
Asphaltum .....	¼ ounce

Mix.

#### Electrotypers' Wax.

Beeswax .....	10 pounds
Venice turpentine.....	1½ pounds
Black lead.....	4 ounces

Melt together.

#### Non-Inflammable Benzene.

Benzene (petroleum ether) 3 fl. ounces	
Carbon tetrachloride.....	17 fl. ounces
Oil of lavender.....	30 minims

Mix.

#### Cleaning Quicksilver.

Quicksilver is found in commerce of two kinds, viz.; distilled or pure, and impure as it comes from the mines. The only apparent impurity sometimes contained in dis-

tilled quicksilver is sulphur, which will show itself on top of the column in the jar of a mercurial pendulum. Dirt and dust will often mar the brilliancy of distilled quicksilver when contained in the glass jar or cells of a mercurial pendulum. Distilled quicksilver may be effectually cleansed of dust and dirt by letting it pass through filtering paper formed into the shape of a funnel, leaving at the small end a hole about the size of a knitting needle. This paper funnel is to be placed in a glass funnel to sustain it. If not entirely successful with one operation, it may be repeated. Impure or non-distilled quicksilver cannot be cleansed by mechanical means; the only hope is that age may improve it, as most of the impurities, being lighter than the quicksilver, will gradually rise to the top.

#### Essence of Whisky.

Butyric ether, 1 ounce; rectified fusel oil, 1 ounce; amyl butyrate, 1 ounce; acetic ether, 2 ounces; extract of orris, 1 ounce; extract of vanilla, 1 ounce; extract of musk root, 4 ounces; cologne spirit, 12 fl. ounces. Mix and use 1 ounce for flavoring 5 gallons. Said to be a typical formula.

#### Essence for Mulled Wine.

Tincture of orange..... 50 drops  
Oil of lemon ..... 10 drops  
Oil of cloves ..... 2 drops  
Oil of cinnamon ..... 2 drops  
Rectified spirit..... 3 ounces  
Water ..... 1½ ounces

Mix. A dessertspoonful of this is added to a bottle of wine sufficiently sweetened.

#### Port Wine Essence.

Tartaric acid..... 3 drams  
Tincture of orange..... 3 drams  
Conc. decoction of log-wood ..... 4 drams  
Glycerin ..... 4 drams  
Oenanthic ether..... 20 minims  
Acetic ether..... 20 minims  
Spirit of nitrous ether..... 30 minims  
Syrup, enough to make... 3 ounces

This quantity to be added to 1½ pints (Imp.) of water, to make non-alcoholic port wine (an English formula). Sherry wine essence is made in like manner omitting the logwood and using a sufficiency of caramel.

#### Razor Paste.

Emery, in finest powder.. 2 parts  
Jewelers' rouge..... 2 parts  
Spermaceti ointment..... 2 parts

Mix well together, and rub into the strop before using.

#### Razor Paste.

Coke is ground to an impalpable powder and well mixed with some suitable medium, such as prepared lard, to a stiff paste. Coke constitutes the true "diamond paste" for sharpening razors and is the only secret which some of the manufacturers pretend to preserve inviolate. A few drops of the oil of lavender are sometimes added to the above mixture.

#### Razor Paste.

Mix fine emery intimately with fat and wax until the proper consistency is obtained in the paste, and then rub it well into the leather strop. Prepare the emery by pounding thoroughly in a mortar the coarse kind, throwing it into a large jug of water, and stirring well. Immediately the large par-

ticles have sunk, pour off into a shallow plate or basin, and let the water evaporate.

#### Razor Paste.

Levigated oxide of tin (prepared putty powder), 1 ounce; powdered oxalic acid, ¼ ounce; powdered gum, 20 grains; make into a stiff paste with water, and evenly and thinly spread it over the strop. With very little friction this paste gives a fine edge to the razor, and its efficiency is still further increased by moistening it.

#### Razor Paste.

Jewelers' rouge,  
Black lead,  
Suet,  
Of each, equal parts.

#### Almond Meal.

Almonds ..... 100 parts  
Borax ..... 5 parts  
Glycerin ..... 4 parts  
Oil of neroli, sufficient.  
Oil of almond, sufficient.  
Essence of musk, sufficient.

Rub down the almonds, sift and add the other ingredients.

#### Almond Meal.

Blanched sweet almonds, and ripe and dry beans, of each, 18 ounces; white castile soap, 6 ounces; spermaceti, 1½ ounces; dried sodium carbonate, 1 ounce; oils of bergamot, lavender and lemon, of each, 6 drams. Beat or grind to a fine powder, and keep the mixture from the air. To be used with a little water, in a little soap, to clean, whiten or soften the skin.

#### To Remove Fixed Bottle Stoppers.

Occasionally it is simply impossible, especially when the glass stopper has become fixed by means of the corrosive action of alkali or other substance capable of practically forming the stopper and neck of the bottle into one piece. Under such circumstances it is best to carefully break off the entire neck by a skilfully directed blow with a wooden mallet or stick. In case of bromine bottles it is essential to guard against spilling the contents on the hands or clothing, which is also likely to cause severe physical injuries. As a rule, a stopper that can be removed at all will yield to continued and careful manipulations with the hands, especially if it is hit with a piece of wood, first on one side and then the other, to start it. The use of heat should be a last resort, and always carefully applied, and draughts of air avoided. Heat from friction or a match, or hot water can be used.

#### Bleaching Sponges.

Soak the sponges in a solution of 1 ounce chloride of lime and ½ ounce tartaric acid to the gallon of water.

#### Bleaching Sponges.

Soak the sponges in dilute hydrochloric acid (1 part acid to 1½ parts water) for 12 hours, wash well with water to remove the lime, then immerse it in a solution of 2 pounds sodium hyposulphite in 12 pounds water to which 2 pounds hydrochloric acid has been added a moment before. After the sponges are sufficiently bleached, remove, wash again, and dry.

#### Bleaching Sponges.

Beat the sponges carefully and then place them in a mixture of

Hydrochloric acid..... 1 part  
Water ..... 20 parts

The sponges are then boiled in water and thoroughly washed, after which they are placed in a water bath to which a sufficient quantity of sulphuric acid has been added to bring it to 4° Beaume. This bath is compounded with bleaching liquor, until it is entirely saturated with gas. The sponges remain in this for half an hour, when they are taken out, rinsed off in soft water and passed through an acid bath. They are placed several times in succession in a bath acidulated with sulphuric acid to 4° B., and to which a sufficient quantity of potassium hydrate or of sodium hydrate has been added to impregnate it with gas. The sponges remain here for some time, when they are taken out, rinsed in soft water, squeezed out and dried.

#### Bleaching Sponges.

Soak the sponges for several days in cold water, renewing the water and squeezing the sponges occasionally. Then wash in warm water, and put into cold water acidulated with hydrochloric acid. Next dry, take out, and wash thoroughly in soft water; then immerse in an aqueous sulphurous acid (sp. gr. 1.034) for a week. Afterward wash in plenty of water, squeeze, and allow to dry in the air.

#### Gas Tight Corks.

Paraffin is fused in a suitable vessel, the dry corks are added and immersed in the paraffin by means of a perforated cover or disc. The air is now easily expelled from the pores of the corks, which, after about five minutes, are removed and cooled; they may now be cut and bored like wax, are easily driven into the necks of the bottles and readily removed, retain their smoothness and are gas-tight throughout.

#### Impervious Corks.

Make a solution of 4 parts of gelatin in 52 parts of water, and add to it, in the dark, or a place illuminated with artificial (non-actinic) light, 1 part of dichromate of potassium or ammonium or sodium, previously likewise dissolved in water. Having first treated the corks with vapors of ether or benzol to render them thoroughly dry, dip them in the prepared solution, and then expose them several days to the sunlight, turning them carefully over so as to make the light fall upon every part of each cork. The coating of gelatin and chromic acid becomes insoluble under the influence of sunlight.

#### Impervious Corks.

Heat the corks to 100° C. (212° F.) in order to kill all spores which they may contain. Then, while still hot, dip them into a solution of 1 part of albumen (egg albumen or blood albumen) in 200 parts of water, and afterward into another containing 1 part of tannic acid, ½ part of salicylic acid and 200 parts of water. This causes a formation of tannate of albumen in the pores of the cork, and the salicylic acid at the same time acts antiseptically.

#### Shoe Blacking Cream (Without Turpentine).

Paraffin, high melting.... 20 parts  
Woolfat, crude..... 10 parts  
Solution of soda, 38° B... 5 parts  
Carnauba wax..... 20 parts  
Nigrosin, fat-soluble..... 5 parts  
Water .....250 parts  
Nigrosin, water-soluble.... 4 parts

Warm the paraffin and woolfat together to 100° C. (212° F.), add the solution of soda, all at once, and heat for twenty minutes until it forms a smooth homogeneous mass. Now add the carnauba wax, all at once, and

continue the boiling until it is saponified and homogeneous, then add and dissolve the fat-soluble nigrosin and stir in. Add, under constant stirring, 150 parts of hot water, in small quantities, gradually. Finally, dissolve the water soluble nigrosin in the remainder of the water and add the solution to the mass and stir in. As a preservative a half part of formalin may be added.

#### Saponified Cream Blacking.

Carnauba wax..... 10 parts  
Beeswax ..... 20 parts  
Solution of soda, 40° B... 4 parts  
Nigrosin, fat-soluble..... 15 parts  
Water, hot.....160 parts  
Oil of turpentine..... 60 parts

Melt the carnauba and beeswax together, add the solution of soda and continue the heat until saponification takes place and the mass becomes homogeneous. Let the mass cool down to about 140° F. and gradually add color, which is dissolved in the oil of turpentine warmed up to 125° F. in the water bath.

This cream can be made of any color desired by using instead of nigrosin, for

Yellow.. 0.8 part cerotin yellow.

Orange.. 0.6 part cerotin yellow and 0.3 part of cerotin orange.

Brown.. 0.6 part of cerotin orange and 0.4 part cerotin brown.

Red..... 1.0 part cerotin scarlet, R, extra, all fat soluble.

#### Saponified Cream Blacking (Without Oil).

Carnauba wax..... 600 parts  
Beeswax ..... 150 parts  
Sodium carbonate ..... 60 parts  
Tallow soap, hard, yellow ..... 65 parts  
Water .....5,500 parts  
Formalin ..... 10 parts

Melt the carnauba and beeswax together. Dissolve the soap, the soda and the color in the water, by the aid of heat, and add the hot solution to the melted wax, in a slow, small stream and under constant stirring. As a color, use about 2 per cent of water-soluble aniline color, such as nigrosin, Bismarck brown, crystalline yellow, etc.

#### Universal Cream Polish.

Beeswax ..... 40 parts  
Carnauba wax..... 10 parts  
Potassium carbonate, crude 6 parts  
Boiling water..... 60 parts

Dissolve the potassium carbonate in the water, add the waxes and boil until complete saponification takes place. Remove from the fire and add another 60 parts of hot water, and stir until smooth. Finally dissolve the coloring matter in 800 parts of oil of turpentine and add to the mass. For yellow, use 5.7 parts of cerotin orange; black, 1.2 parts of deep black; brown, 0.5 part of cerotin orange, and 0.25 part of brown No. 1,437, all oil-soluble aniline colors.

#### Patent Wagon Grease from Rosin Soap.

Powdered slaked lime.... 90 pounds  
Rosin oil.....100 pounds

Mix by stirring, then heat the mixture, constantly stirring until a uniform paste of the consistency of syrup is obtained. This rosin oil compound is a component of all the patent wagon greases.



**Lubricant.**

	Liquid.	Solid.
Petroleum (30° to 37° gravity) .....	1 gal.	1 gal.
Crude paraffin.....	1 oz.	2 ozs.
Wax (myrtle, Japan and gambier).....	1½ ozs.	7 ozs.
Sodium bicarbonate..	1 oz.	1 oz.
Powdered graphite 3 to 5 ozs.		8 ozs.

Melt the wax and crude paraffin, add the sodium bicarbonate and continue the heat until saponification takes place, then incorporate the petroleum and powdered graphite.

**Lubricant, Munger's.**

Petroleum .....	1 gallon
Tallow .....	4 ounces
Palm oil.....	4 ounces
Plumbago .....	6 ounces
Soda .....	1 ounce

These are mixed and heated to 180° F. for an hour or more, cooled and after 24 hours, well stirred together.

**To Render Ivory Flexible.**

Immerse in a solution of pure phosphoric acid (sp. gr. 1.13) until the ivory loses, or partially loses its opacity, when it is washed in clean, cold water, and dried. In this state it is as flexible as leather, but gradually hardens by exposure to dry air. Immersion in hot water, however, restores its softness and pliancy. The following method may also be employed: Put the ivory to soak in 3 ounces nitric acid mixed with 15 ounces of water. In 3 or 4 days the ivory will be soft.

**Skeleton Leaves.**

Soak in rain water for some weeks, remove by floating upon a card, and very gently remove upper skin with a soft camel-hair brush. Float in water, and catch on a card with the other side uppermost, and remove other skin and pulp. A stiff brush may be needed, to be used by dabbing. Do not touch with finger. Finally wash well, bleach with Javelle water, wash and dry.

**Battery Fluid.**

Dissolve 1½ ounces of potassium dichromate in twenty-four ounces of hot water and add ¾ ounce of saltpetre—let this cool, then add 3 ounces of commercial sulphuric acid, cool again and add a solution of ¼ ounce of mercury bisulphate in 3 ounces of cold water. This gives 2 pints of fluid. Do not use until cold.

**Battery Fluid.**

Potassium dichromate.....	3 ounces
Water .....	½ gallon
Sulphuric acid.....	6½ ounces

Allow to stand six hours before using.

**Homemade Leclanche Battery.**

Procure as many two-pound jars as the number of cells wanted. Procure an equal number of porous cells of the same height, but only half the diameter. Place a lead-capped plate of carbon, with terminal in each porous pot; fill in tight with a mixture of equal parts of crushed graphite and black oxide of manganese. Put a zinc rod (with terminals) in each outer jar; fill up to about three-fourths their capacity with a solution of 1 part ammonium chloride to 10 parts of water. Connect up in series—that is to say, the carbon of the first cell to the zinc of the next, and so on, leaving the first zinc and the last carbon free for attachment to the outer circuit.

**Fire Extinguishing Liquid.**

Make the following solutions: 1. Ammonium chloride, 200 parts; water, 20,000 parts. 2. Alum calcined and pulverized, 350 parts; water, 10,000 parts. 3. Ammonium sulphate, in powder, 3,000 parts; water, 500 parts. 4. Sodium chloride, 2,600 parts; water, 40,000 parts. 5. Sodium carbonate, 350 parts; water, 5,000 parts. 6. Liquid waterglass, 4,500 parts. Mix the solutions in the order named, and to the mixture add 20,000 parts of water.

**To Drill Holes in Glass.**

Stick a piece of stiff clay or putty on the part where you wish to make the hole. Make a hole in the putty the size you want the hole, reaching to the glass, of course. Into this hole pour a little molten lead, when, unless it is very thick glass, the piece will drop out.

**Etching Fluid, to Write on Glass.**

Ammonium fluoride.....	10 parts
Barium sulphate.....	10 parts

Rub well together in a porcelain mortar, transfer to a platinum or leaden capsule, and add enough fuming hydrofluoric acid to make a fluid suitable for writing, mix with a platinum spatula. The fluid must be used with a new steel pen, after thirty seconds it may be washed off, and the glass will be found to be sufficiently etched.



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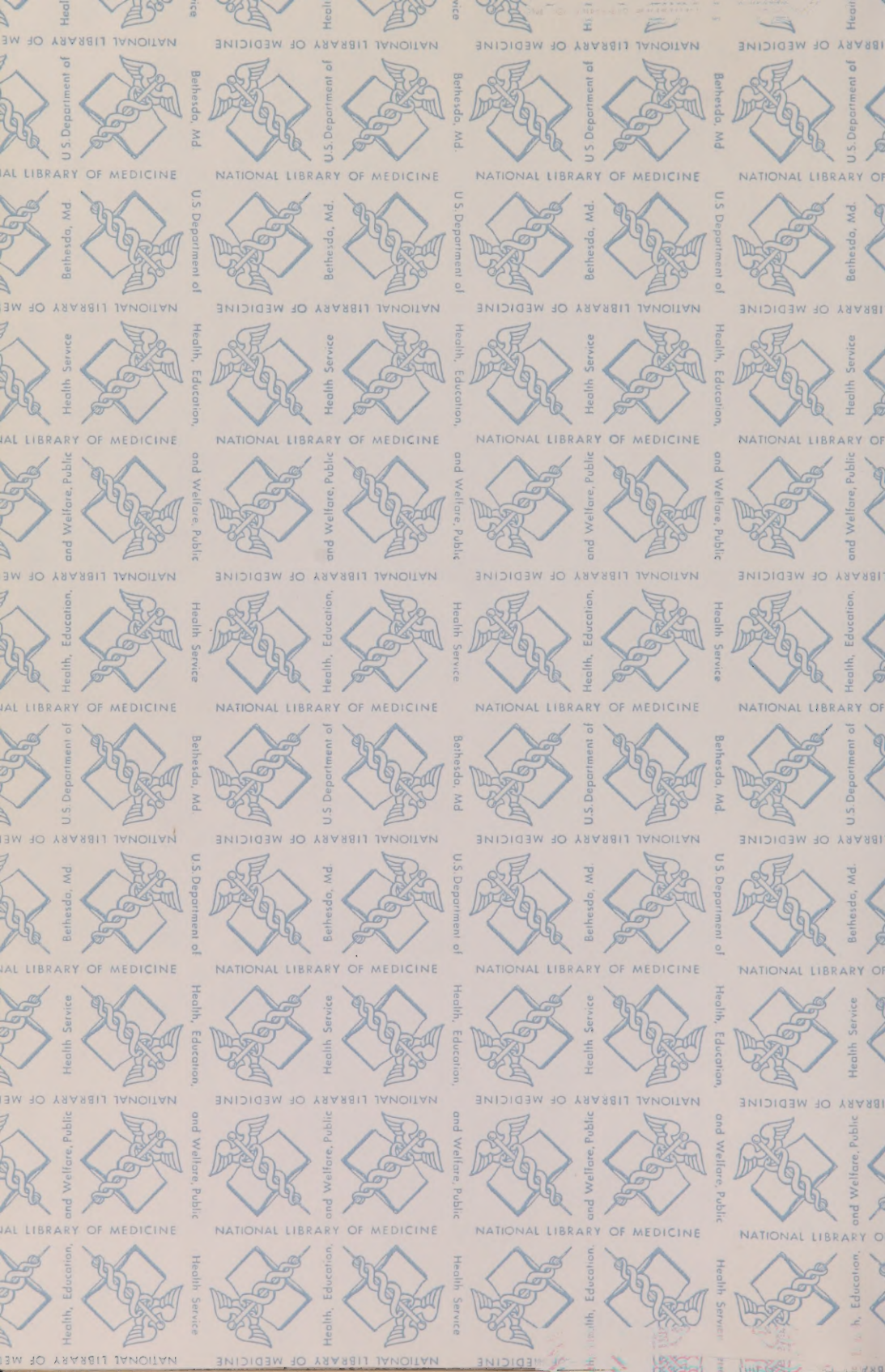
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